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University of Wisconsin - Eau Claire

Sustaining Rural Systems:  
Rural Vitality in an Era  
of Globalization and  
Economic Nationalism

*Field Study Guide*



University of Wisconsin  
**Eau Claire**



# Sustaining Rural Systems: Rural Vitality in an Era of Globalization and Economic Nationalism

## *Field Study Guide*

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# Table of Contents

Introduction.....	4
Itinerary at a Glance.....	8
Chapter 1: The Urban Fringe-Rural Transition Zone.....	9
Chapter 2: Western Wisconsin.....	29
Chapter 3: The Cutover Region: The Agricultural-Forest Frontier.....	49
Chapter 4: Between Duluth and the Twin Cities.....	59
Acknowledgements.....	69

## Maps, Images, and Figures

### Introduction

- p. 5: Figure 0.1: Minnesota and Wisconsin Reference.
- p. 6: Figure 0.2: Field Study Route.

### Chapter 1

- p. 10: Daily Itinerary Map.
- p. 12: Figure 1.1: Definitions of the Minneapolis-St. Paul Metropolitan Area.
- p. 13: Figure 1.2: Location of Dakota County.
- p. 13: Figure 1.3: The Mid-Continent Rift.
- p. 14: Figure 1.4: The Square Land Survey of the 1785 Land Ordinance.
- p. 17: Figure 1.5: Planned Rural Land Use in the Seven-County Metro Area, 2030 Plan.
- p. 19: Figure 1.6: Location of the Cannon River.
- p. 21: Figure 1.7: The Vermillion River Watershed District.
- p. 21: Figure 1.8: Gambrel-Roofed Barn.
- p. 22: Figure 1.9: Gothic-Roofed Barn.
- p. 22: Figure 1.10: Modern Dairy Barn.
- p. 23: Figure 1.11: Location of Washington County.
- p. 24: Figure 1.12: The St. Croix River Watershed.
- p. 24: Figure 1.13: Location of St. Croix County.

### Chapter 2

- p. 30: Daily Itinerary Map.
- p. 31: Figure 2.1: Location of Eau Claire County.
- p. 31: Figure 2.2: Location of Chippewa County.
- p. 32: Figure 2.3: Eau Claire Farmers Market in Relation to Other Eau Claire Locations.
- p. 32: Figure 2.4: Hmong Population in Wisconsin.
- p. 33: Figure 2.5: Eau Claire Farmers Market Statistics.
- p. 34: Figure 2.6: Driftless Area Geomorphology in Southeastern Minnesota.
- p. 34: Figure 2.7: Location of Pepin County.
- p. 35: Figure 2.8: Agricultural Employment by County and Location of Butcher Shops near Eau Claire.
- p. 36: Figure 2.9: Location of Buffalo County.

- p. 37: Figure 2.10: Invasive Species in the Mississippi River.
- p. 38: Figure 2.11: Lock and Dam No. 4.
- p. 39: Figure 2.12: Location of Hospitals in Four Western Wisconsin Counties.
- p. 40: Figure 2.13: Comparing Physician Assistant and Physician Careers.
- p. 41: Figure 2.14: A Student Working with Cardinal Manufacturing.
- p. 41: Figure 2.15: Location of Trempealeau County.
- p. 44: Figure 2.16: Total Enrollment and Enrollment of Students of Color in Trempealeau County School Districts.
- p. 45: Figure 2.17: Density of Dairy Cows in Wisconsin.

### Chapter 3

- p. 50: Daily Itinerary Map.
- p. 51: Figure 3.1: Leinenkugel's Logo.
- p. 52: Figure 3.2: Location of Barron County.
- p. 52: Figure 3.3: Location of Washburn County.
- p. 53: Figure 3.4: The St. Croix National Scenic Riverway in Interstate State Park.
- p. 53: Figure 3.5: Location of Douglas County.
- p. 55: Figure 3.6: Ships on the Great Lakes.
- p. 56: Duluth Points of Interest Map (restaurants, cafés, museums).

### Chapter 4

- p. 60: Daily Itinerary Map.
- p. 61: Figure 4.1: Location of Carlton County.
- p. 62: Figure 4.2: Lands Ceded by the Ojibwa to the U.S. between 1836-1854.
- p. 62: Figure 4.3: Location of Pine County.
- p. 64: Figure 4.4: Images from Fire Prevention Campaigns.
- p. 64: Figure 4.5: Location of Burnett County.
- p. 65: Figure 4.6: Four Cubs Farm.
- p. 67: Figure 4.7: Wisconsin's Prominence in the Dairy Industry.

# Introduction

It is with great pleasure that I invite you to delve into the details of this Field Guide prepared for the 27th Annual Colloquium of the International Geographical Union Commission on the Sustainability of Rural Systems (IGU-CSRS). Distinguished Macalester College Professor Emeritus David A. Lanegran, with support from students at UWEC and Macalester, has prepared a place-by-place description of our field excursion.

The theme for this Colloquium is **Sustaining Rural Systems: Rural Vitality in an Era of Globalization and Economic Nationalism** and encompasses four key sub-themes: **Rural Innovations: Entrepreneurship and Rural-Urban Partnerships, Recognizing Rural Demographic Diversity, Land Use Transitions, and Agricultural Transitions**. Writing in a 2004 history and critique of the concept of sustainable development, Robinson "...argue[d] for an approach to sustainability that is integrative, is action-oriented, goes beyond technical fixes, incorporates a recognition of the social construction of sustainable development, and engages local communities in new ways" (Robinson 2004, 369). Robinson both highlighted the criticisms of the concept of sustainability while re-invigorating debate about how the principles of sustainability could provide a way forward for communities and policy makers. Members of the Organizing Committee have worked hard to select a cross-section of rural communities and businesses that reflect our themes and provide a snapshot of sustainability initiatives and exemplars in rural Minnesota and Wisconsin, U.S., in 2019. Clearly, there are rural issues that we are not able to tackle in the

course of our field excursion, but we are hopeful that by linking the knowledge and interests of rural scholars from around the world with local Midwestern communities and initiatives, we will generate deep and engaging conversations about the state of rural places, peoples, and environments in contemporary America.

This Field Guide provides a bit of history and contemporary circumstances as well as details about the places we will visit. As the overview map (page 6) illustrates, we begin our journey in St. Paul, Minnesota, moving from the urban to the urban-fringe to rural places exploring the concept of sustainability from our southernmost point in Dakota County, Minnesota, through western Wisconsin to our northern most point of Duluth, Minnesota, along the shores of Lake Superior. The Field Guide is written to be accessible to a wide audience, inclusive of community members and learning communities within and beyond the academy. Additional resources are provided at the end of each chapter for those who are interested in learning about a particular topic in greater detail. We are hopeful that it will become a resource for those who are interested in rural Minnesota and Wisconsin, and more broadly in perspectives on rural sustainability.



Holly R. Barcus, Professor, Macalester  
Co-Chair, IGU-CSRS Steering Committee  
Co-Chair, IGU-CSRS 2019 Organizing Committee

## References

- Robinson, John. 2004. Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48: 369–384.

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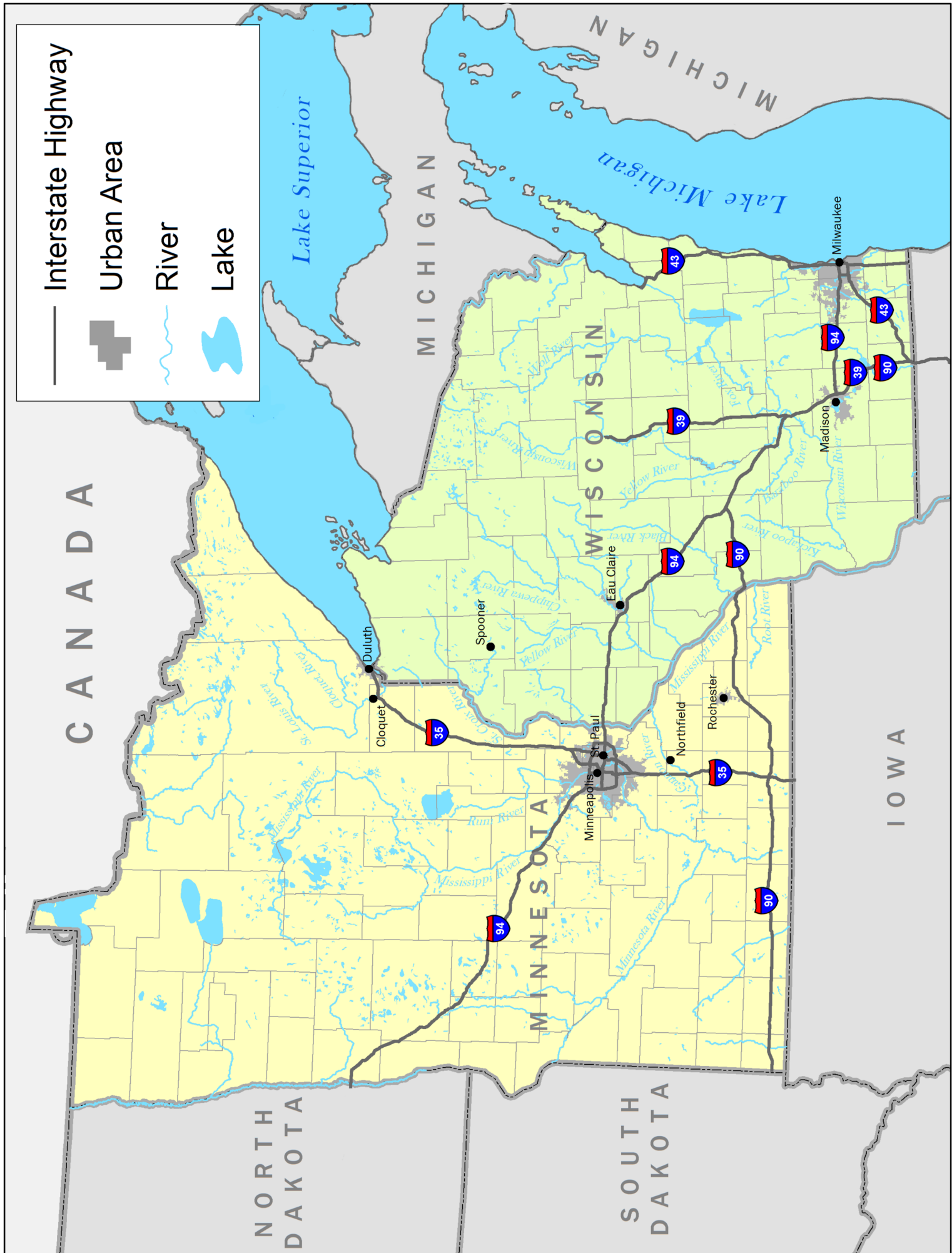


Figure 0.1: Minnesota and Wisconsin Reference.

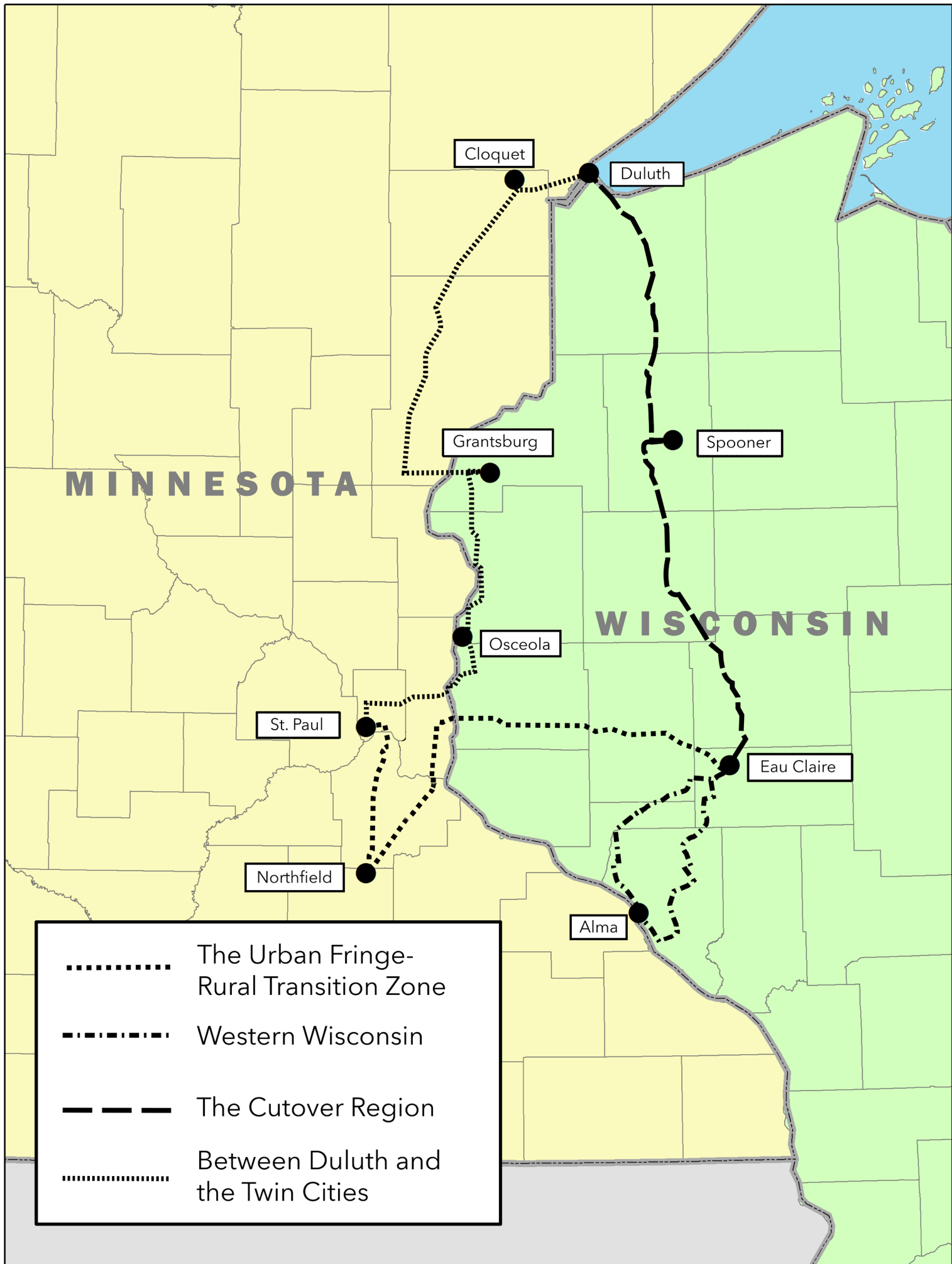


Figure 0.2: Field Study Route.



## Minnesota

Known as the “Land of 10,000 Lakes” or the “North Star State”, Minnesota was admitted as the 32nd U.S. state in 1858. As of 2017, Minnesota is the 12th largest state in area, and the 22nd most populous, with 5.5 million people. Nearly 60% of its residents live in the Minneapolis-St. Paul-Bloomington metropolitan area, also known as the “Twin Cities”. While Minnesota’s earliest industries were founded on fur trading and agriculture, the city of Minneapolis grew around the flour mills powered by St. Anthony Falls. Today’s economy has heavily diversified, shifting from agriculture and resource extraction to services and finance. Minnesota’s tourism industry alone was worth around \$14.4 billion in 2015. Today, the state is the U.S.’s largest producer of sugar beets, sweet corn, and green peas for processing, and farm-raised turkeys. Minnesota additionally produces a significant amount of corn and soybeans. In northern Minnesota, farming is less common, and foresting and mining dominate the economy. Formed from basaltic lava around 2.7 billion years ago, and later massive ice sheets, northern Minnesota is often dubbed “The Iron Range” for its iron deposits.

Minnesota has a relatively strong connection with organized sports. The Minnesota Vikings have played in the National Football League since 1961, and the Minnesota Twins have played in Major League Baseball in the Twin Cities since 1961. In addition, Minnesota has the Minnesota Timberwolves, who joined the National Basketball Association in 1989, and the National Hockey League’s Minnesota Wild, who have been in Minnesota since 1967 (then known as the Minnesota North Stars).

Minnesota has some of the earth’s oldest rocks, including gneisses that are about 3.6 billion years old. However, today Minnesota has four thriving ecological provinces: Prairie Parkland, in the southwestern and western parts of the state, the Eastern Broadleaf Forest in the southeast, the Tallgrass Aspen Parkland in the northwest, and the Laurentian Mixed Forest in the north. Unlike the broadleaf forests to the south, the Laurentian Mixed Forest contains a vast wilderness of pine and spruce trees mixed with patchy stands of birch and poplar.

In recent years, Minnesota has had a large influx of immigrants from Asia, the Horn of Africa, the Middle East, and Latin America. Minnesota has America’s largest Somali population, with an estimated 57,000 people, the largest concentration outside of the Horn of Africa. In addition, Minnesota holds the second largest Hmong population (an ethnic group in East and Southeast Asia) with around 66,000 people.

## Wisconsin

Bobby Valiska, UWEC student

Known as the “Badger State” or “America’s Dairyland,” Wisconsin was admitted as the 30th US state in 1848. As of 2018, Wisconsin is the 20th most populous state, with 5.8 million people, and the 23rd largest state in area. The population is roughly spread out throughout the whole state of Wisconsin.

While Madison is the capital of Wisconsin, Milwaukee County is the most populated county in Wisconsin, holding the roughly 0.96 million people. Originally in the nineteenth century, wheat was a primary crop on Wisconsin farms. Wisconsin produced about one-sixth of the wheat grown in the U.S. during the mid-nineteenth century. However, wheat depleted nutrients in the soil rapidly and was defenseless to insects and bad weather. With this depletion of opportunity to grow wheat, dairy farming was a popular replacement for growing wheat in Wisconsin. The reason for this popular change to dairy was due to many of Wisconsin’s farmers coming from New York, which was the leading dairy producing state at the time. By 1915, Wisconsin had become the leading producer of dairy products in the U.S. which then led to giving Wisconsin its nickname as “America’s Dairyland.” Due to this nickname, Wisconsinites have referred to themselves as “cheeseheads.” This symbolism is still shown today at the games of Wisconsin’s NFL team, the Green Bay Packers, where most of the fans wear foam “cheesehead” hats.

Agriculture was not possible in the heavily forested areas in northern and central parts of Wisconsin, so settlers came to these regions for logging. Logging is another important part of Wisconsin’s history. The industry began to develop in Wisconsin in the 1830s. This industry was first set up along the Wisconsin River in order to use the river to transport the wood to sawmills from where it was being cut. Logging continued year-round due to the construction of railroads that allowed loggers to go deeper into the forests to cut down wood supplies that were previously not able to be shipped. Logging was a dangerous trade with high accident rates. On October 8, 1871, the Peshtigo Fire burned roughly 1,875 square miles (4,850 km<sup>2</sup>) of forest land and ended up killing between 1,200 and 2,500 people. This was the deadliest fire in U.S. history. At the beginning of the twentieth century, logging in Wisconsin had started to deplete due to many of forests being cleared and never replanted.

Wisconsin also has a strong connection to the world of professional sports. The Green Bay Packers have played in the National Football League since 1921. Wisconsin is also home to the Milwaukee Brewers, who have played in Major League Baseball in Milwaukee since 1969 after being relocated after one year from Seattle, Washington (originally founded as the Seattle Pilots). Additionally, Wisconsin has the Milwaukee Bucks who have played in the National Basketball Association since 1968.

## Itinerary at a Glance

Tuesday, 23 July

Depart St. Paul for Northfield 7:45 am  
 Main Street Project, Regeneration Farms 9:00 am - 12:00 pm  
 Lunch at St. Olaf College 12:00 pm - 1:15 pm  
 Hmong American Farmers Association (HAFA) Farms 1:45 pm - 3:00 pm  
 Depart for Eau Claire, Wisconsin 3:00 pm  
 Arrive in Eau Claire and check-in at hotel 5:15 pm  
 Reception and Featured Speaker - Ezra Zeitler 6:30 pm - 8:00 pm

Wednesday, 24 July

Walk to Eau Claire Downtown Farmers Market 7:45 am  
 Tour of Farmers Market 8:00 am - 8:45 am  
 Durand Smokehouse 9:30 am - 10:20 am  
 Mississippi River Lock and Dam No. 4 11:00 am - 12:20 pm  
 Danzinger Vineyards 12:30 pm - 1:30 pm  
 Suncrest Gardens (Lunch) and Great River Organic Milling 2:00 pm - 3:30 pm  
 Cowsmo Compost/Rosenholm Farm 3:45 pm - 4:45 pm  
 Depart farm to return to Eau Claire 5:00 pm  
 Arrive in Eau Claire 6:00 pm

Thursday, 25 July

Depart Eau Claire for Spooner 8:30 am  
 Chickadee Hills Homestead Farm 10:15 am - 12:30 pm  
 Lunch and Tour - Pine Brook Farm 12:40 pm - 2:00 pm  
 Depart farm for Duluth, Minnesota 2:00 pm  
 Arrive in Duluth and check-in at hotel 3:30 pm  
 Load bus for Vista Fleet Boat Tour 4:15 pm  
 Boat Tour 4:45 pm - 6:30 pm

Friday, 26 July

Depart Duluth for Cloquet 8:15 am  
 Fond du Lac Cultural Center and Museum 9:00 am - 10:00 am  
 Depart Cloquet for Grantsburg, Wisconsin 10:00 am  
 Lunch from Burnett Dairy at Brickfield Brewing 11:30 am - 12:45 pm  
 Four Cubs Farm 1:00 pm - 2:30 pm  
 Common Harvest Farm Tour and Dinner 3:15 pm - 6:00 pm  
 Brief stop for buffalo viewing at Belwin Conservancy 7:15 pm  
 Arrive in St. Paul 8:30 pm

Chapter 1  
The Urban Fringe-Rural  
Transition Zone



## Daily Itinerary: Tuesday, 23 July

7:45 am - Depart St. Paul for Northfield

9:00 am - 12:00 pm - Tour of Main Street Project, Regeneration Farms Project

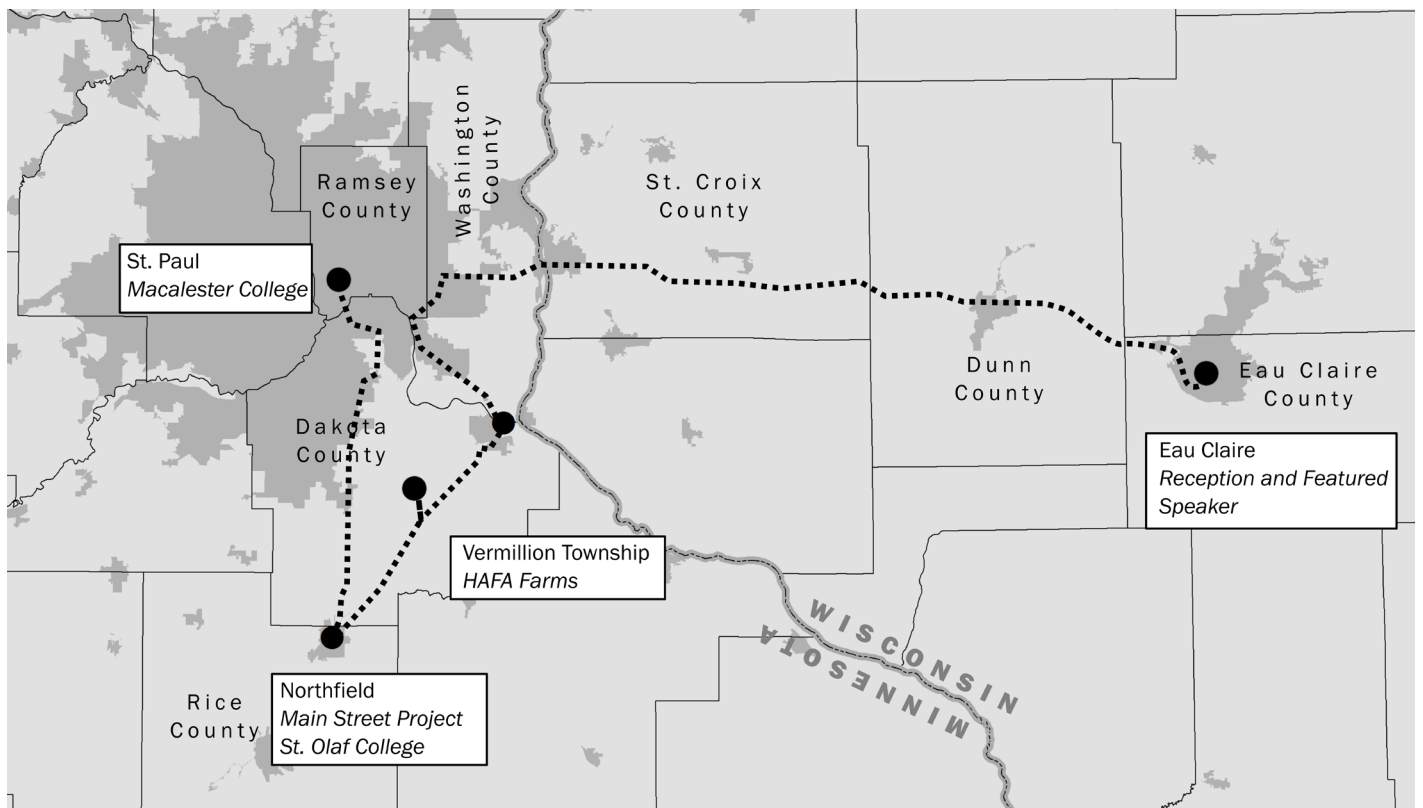
12:00 pm - 1:15 pm - Lunch at St. Olaf College

1:45 pm - 3:00 pm - HAFA Farms - Hmong American Farmers Association

3:00 pm - Depart HAFA Farms for Eau Claire, Wisconsin

5:15 pm - Hotel Check-In, Lismore Hotel

6:30 pm - 8:00 pm - Featured Speaker and Reception



Our first day in the field will be focused on the evolution of the Midwestern agricultural landscapes on the southern and eastern edges of the expanding Twin Cities and western Wisconsin. It will end in Eau Claire, a regional urban center. The glaciated topography and mid-latitude continental climate frame the agricultural potential of the area. For the past two centuries, farmers have continually modified the landscape in response to changing technologies and markets. Today we will see examples of large-scale grain farms and smaller-scale alternative modes of production. The two site visits, Main Street Project and HAFA Farms, also focus on changing demographics of farmers. We will examine efforts to plan for sustainable production techniques and protect the quality of the surface waterbodies and aquifers. In western Wisconsin, we will travel through the farmland-forest transition zone.

## St. Paul

St. Paul is the capital and second-most populous city in Minnesota. The city's estimated population is about 309,180. Having experienced a two decades of growth it has returned to the population size of the 1960s. The city lies mostly on the east bank of the Mississippi River. Together with Minneapolis, it forms the core of the Minneapolis-St. Paul Metropolitan area, the 16th largest metro area in the U.S. with approximately 3.6 million residents. It was founded near Fort Snelling as part of the fur trading economy of the early 19th century. The U.S.-Dakota Treaty of 1837 opened the land east of the Mississippi to White settlement. St. Paul was first settled by a band of French speaking squatters who, driven off the Fort Snelling Military Reserve, relocated on what is now the St. Paul riverfront in 1840. In 1841, Father Lucien Galtier was sent to minister to the Catholic French Canadians of the community. He established a chapel, named for his favorite patron saint, Paul the Apostle, on the bluffs above the river landing, and convinced the settlement to adopt the name St. Paul in honor of the new chapel. The settlement was located in a place where steamboats could off-load their cargo where it was possible to transfer the goods to the upland via a tributary river valley with the development of steamboat commerce on the Mississippi River; it became the major river port of the upper Midwest. St. Paul was selected as the capital of Minnesota Territory in 1849 and became the state capital in 1858. This location enabled St. Paul to become the link between the fur trade of northern Minnesota, the Red River Valley, and St. Louis, Missouri, and other urban markets. After the land west of the Mississippi was opened for agricultural settlement in 1851, St. Paul, the region's primary port, became the destination of a tide of immigrants.

Improvements in transportation and manufacturing technologies had a great impact on the connections between St. Paul and other cities. James J. Hill seized the opportunities offered by railroad technology and created a company that soon dominated transportation in the northern tier of states. The transition from steamboats to railroads enabled businesspersons to expand their operations into the northern and southern parts of the state. Between 1870 and 1940 (the national railroad period), St. Paul became a center for finance, wholesaling, garment manufacturing, and government. Large numbers of immigrants from Europe and the establishment of a streetcar network characterized this period. The last 75 years were dominated by rapid changes in transportation and communication technologies. Finance and government are still important components of the economy, but manufacturing and wholesaling are no longer significant. The largest private employer is 3M, a highly diversified technology and manufacturing corporation with branches around the world. (1)

According to the U.S. Census Bureau, in 2005-2007, the racial make-up of St. Paul was 66.5% White Americans, of whom 62.1% were non-Hispanic, a decrease from 93.6% in 1970, 13.9% Black or African Americans, 0.8% American Indians, of whom 0.6% were non-Hispanic, and 12.3% Asian Americans, mostly Hmong. Hispanics and Latinos made up 8.7% of St. Paul's population and individuals of two or more races made up the remaining 3.4%.

The ethnic make-up of the population is changing and becoming more diverse. The 2005-2007 American Community Survey reported the population was 26.4% German, 13.8% Irish, 8.4% Norwegian, 7.0% Swedish, and 6.2% English. There is also a visible community of people of Sub-Saharan ancestry, representing 4.2% of St. Paul's population. In 2000, St. Paul was home to the largest number of Hmong living in urban areas. Mexican immigrants have settled in St. Paul's West Side since the 1930s. Mexico opened a foreign consulate in St. Paul in 2005. (2)

## Macalester College

Macalester College is a global leader among liberal arts colleges, animated by our mission of high standards for scholarship and a special emphasis on internationalism, multiculturalism, and service to society. 2,174 students come from every state and 97 countries to be challenged by an academic program ranked among the top 20 in the nation. Intellectual curiosity and a collaborative spirit drive the community. Working closely with professors, staff, and classmates, students become strong contributors.

Macalester was founded in 1874 as a Presbyterian but nonsectarian college with a firm belief in the transformational power of a liberal arts education. Macalester's belief in the transformational power of education continues today with a focus on creating a culture of diversity and inclusion. To do that, the College strives to question and explore cultural narratives and beliefs, and deliberately creates spaces where members of the community can grow intellectually and personally. Macalester's enrollment has grown steadily over the past 15 years. In fall 2018, the College enrolled the largest first-year class in its history. Based on fall 2018 data, the six-year graduation rate is 90%, and six months after graduation, 91% of 2018 graduates reported that they had a job congruent with their interests. Of the College's more than 200 full-time faculty members, 94% have a doctorate or the highest degree in their field. The College's rigorous and distinctive curriculum offers 39 majors and more than 800 courses annually. Interdisciplinary concentrations in a range of areas, including Cognitive Science, Community and Global Health, and Urban Studies, are emblematic of the many ways faculty work together across disciplines to actively create relevant, distinctive programs for our students (3).

Macalester's nationally and internationally recognized Geography Department, founded in 1947 by Hildegard Binder Johnson, is unusually broad in scope for an undergraduate liberal arts college. The Department leads students through an exploration of urban and regional planning, environmental geography, cartography, geographic information science and socioeconomic development in various regions of the world. Students may major or minor in geography. Students may also take a specialized minor focused on Geographic Information Systems or major in geography with an additional concentration in Urban Studies. (4)

## Highway 13 and Early American Highways

As we embark on the first leg of our journey, we enter the urban fringe and follow the general path line of the first territorial road from Fort Snelling to the communities of Iowa and beyond.

The building of the national highway and later the freeway network increased the rate of the nation's economic development, which enhanced the speed and mobility of motorists and truckers, and gave opportunities for millions of urban residents to move from central cities to suburban communities. The car offered a quiet, clean and safe method of transport. In 1910, there were about 458,000 vehicles registered in the U.S. The number of vehicles kept climbing and reached 27.4 million in 1940. The Federal Government tried to organize the maze of roads in 1925, by determining that each state would designate 7% of its road system for federal highways in exchange for financial support. In addition, it was determined that the national highways would be numbered – north/south routes got odd numbers and east/west routes got even numbers (1).

Throughout the early twentieth century, there were several pressure groups lobbying for better roads. Some wanted to “get the farmer out of the mud” and build farm-to-market roads. Others wanted to improve intercity transport so the trucking industry could become more effective. Still others were interested in getting better roads in urban areas where most of the cars were. In the 1930s, people were impressed by the autobahn constructed in Germany, and a handful of toll roads were built following that design. The 32nd president of the U.S., Franklin Delano Roosevelt (FDR), thought a road-building program would benefit the American economy, but later determined he could get more development by investing in other sectors of the economy. Nonetheless, the Works Progress Authority, which he created, was very active in road construction. When it became clear that the U.S. would enter World War II, defense issues dominated all federal activities in highway planning and building. After the war, during the Truman and Eisenhower Administrations, the politics of highways were intense and the groups uncompromising. Agriculturalists and small-town politicians wanted better secondary roads. Truckers did not want to waste money on secondary roads, but rather wanted better truck highways. Planners wanted to use the roads for urban renewal and social control. Business leaders wanted highway improvement that would promote economic development. The railroad interests were opposed to all new programs. All wanted the other parties to pay for it. In 1956, the Federal Aid Highway Act created the Interstate Highway System, a 41,000-mile network to ensure “speedy, safe transcontinental travel,” paid for by a gasoline tax (1).

As we drive along this corridor, we will see the expanding edge of one of the worst (or best?) examples of urban sprawl in the U.S. While we can see ample evidence of sprawl along the right-of-way, hidden from our view are hundreds of new houses and small developments along the secondary roads of Scott and Dakota Counties. Groups like the Land Stewardship Project and 1000 Friends of Minnesota have worked with legislators to try to redirect state policies that promote unlimited expansion. The Minnesota Livable Communities Act is the latest attempt to end practices that promote sprawl. Here is also the outer edge of the Metropolitan Urban Services Area, or MUSA Line, which demarcates the outer limit for the sewer system. This is not a greenbelt plan that prohibits continued urbanization, but it has a similar impact. Additional efforts are underway to develop some sort of land use planning that will work outside the MUSA Line (2).

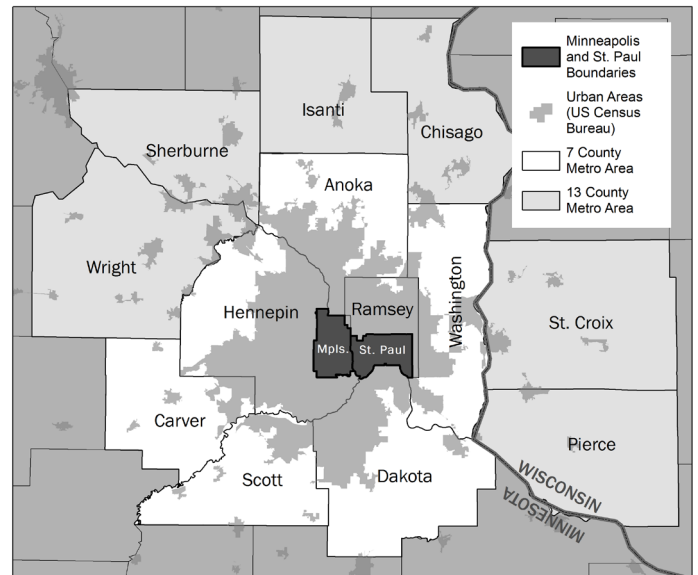


Figure 1.1: Definitions of the Minneapolis-St. Paul Metro Area. (source: Metropolitan Council, U.S. Census Bureau)

## Dakota County

For our drive from Macalester to Northfield, the vast majority of our time travelling will be through Dakota County. The county is named after the Dakota Sioux tribal bands who settled in the area prior to European immigrants. Dakota County is included in the Minneapolis-St. Paul Metropolitan Statistical Area, which has 3.3 million residents. Many Dakota County residents are commuters to the Twin Cities. Due to its location at the confluence of the Mississippi and Minnesota Rivers, and bordering the state of Wisconsin on the east, Dakota County has rich historical roots. As St. Paul grew, Dakota County was a focal point of transportation, communication, and commerce. During the twentieth century, some of the largest stockyards and meatpacking plants in the world were located in this county, in South St. Paul.

The county is home to many rivers and lakes, and much of its land has been used for agricultural purposes. Unlike other parts of the state, the hilly terrain throughout this region helps keep farms smaller and more diversified. However, during the 1960s, Dakota County residential development began to increase and has continued to the present day. From 1990 to 2000, the population jumped from 275,227 to 355,904. The homeownership vacancy rate is remarkably low, at 1.7% as of 2018. While there is an increasing Hispanic and Asian population (as of 2018, 6.0% and 4.4%, respectively), the vast majority (85.2%) of people in the county are White. Today the county contains a combination of burgeoning suburbs and intensive agriculture. The Metropolitan Council Plan for 2030 has designated the southern part of the county as permanent agriculture (3).

## Eagan

Established in 1860, Eagan is a city in Dakota County, located just south of St. Paul. The two cities are separated by the Minnesota River; upstream from the confluence with the Mississippi River. In 2017, Eagan had a population of 66,627, and was ranked as Minnesota's 11th largest

city and the sixth largest suburb in the metro area. While today Eagan is predominantly a commuter town for Minneapolis and St. Paul, it was settled as an Irish farming community and was quick to become known as the “Onion Capital of the U.S.” Population in Eagan grew following the relocation and expansion of Highway 77 in 1980 and the completion of the final Interstate 35E freeway in the mid-1980s. Today, Eagan has extensive access to Minnesota’s highway system, with Interstate 35E, Interstate 494, and Minnesota State Highways 13, 55, 77, and 149, all crossing through the city.

Eagan is also home to many business headquarters. Regional Elite Airline Services, Universal Cooperatives, and Buffets, Inc. are headquartered in Eagan. The Minnesota Vikings have relocated their headquarters from Eden Prairie, Minnesota, to Eagan. Before closing down, Mesaba Airlines and Northwest Airlines had their headquarters in Eagan. Today, the top employers include Thomson Reuters, Blue Cross Blue Shield of Minnesota, U.S. Postal Service, United Parcel Service, Ecolab, and Coca-Cola (4).

## Rosemount

Like many other cities that grew in Dakota County, Rosemount was established in 1858 with a large Irish heritage. It was a small community for much of its history until growing significantly: between 1970 and 2017, its population increased from 1,337 to 24,344. Today, Rosemount is home to the Pine Bend Refinery, the largest oil refinery in Minnesota. The population is 87.3% White, 3.1% Hispanic, 3.0% African American, and 5.6% Asian (5). The city is expected to continue growing, with a 71% increase in jobs projected by 2040 (6).



Figure 1.2: Location of Dakota County.

## Farmington

Similar to Rosemount, Farmington grew in the early 1850s. The village, originally called Dakota City, began around the intersection of the Vermillion River, Minnesota Central, Hastings, and Dakota railroads. As of 2016, the population of Farmington was

22,656. The city train station in Dakota City was Farmington Station, and non-residents began confusing the two names, eventually leading to the identification of the town as Farmington. In 1869, the Dakota County Fair was moved to Farmington, where it still operates annually today. Farmington was one of the first communities in the U.S. to offer free rural mail delivery, in 1897 (7).

## Moraine Belt

As we depart the southernmost deposits of the Superior lobe, we enter the highly eroded, older, pre-Wisconsin glacial deposits. This includes older drifts such as the Red Drift and the even older Gray Drift. Ordovician marine sedimentary rocks about 450 million years old, with some good exposures visible from the U.S. 52, underlie this entire route. The area we are currently driving through is part of the Midcontinent Rift System, or Keweenaw Rift. This rift is a 1,200-mile geological rift that was formed when the continent’s core, the North American craton, began to split apart during the Mesoproterozoic era of the Precambrian, about 1.1 billion years ago. This rift failed, leaving behind some of the oldest and thickest layers of igneous rock exposed on earth (8).

On a geological scale, southern Minnesota is separated from the rest of southeastern Minnesota by the Owatonna Moraine, the eastern branch of the Bemis Moraine, a terminal moraine of the Des Moines lobe from the last Wisconsin glaciation, which extended from approximately 75,000 to 11,000 years ago. This moraine runs south from the Twin Cities in the general area of Minnesota State Highway 13 and Interstate 35, which is generally coterminous with the Paleozoic Plateau Section of the Eastern Broadleaf Forest Province. Stretching into the St. Croix River, the bedrock here is lower Paleozoic sedimentary rocks, with limestone and dolomite especially prevalent near the surface. While there are thin top soils lying atop porous limestones, there is also an extensive network of caverns and sinkholes. This area was later to be part of what is considered the “Driftless Area” (9).



Figure 1.3: The Mid-Continent Rift. (source: CEUS-SSC)

## Early Agriculture in Southeast Minnesota

Southeastern Minnesota passed through the frontier phase in a surprisingly short time. In the 1840s, fur trade dominated the state. New settlers arrived in the 1850s to a wilderness. By 1880, the agriculture frontier had entered the region, and the farmers

turned away from crops that could be shipped long distances to livestock operations that yielded higher returns in local markets. The farmers who settled this region in the 1850s came largely from New England and the middle states, with important mixtures of immigrants from Germany and Luxembourg. The settlers frequently came via eastern parts of the Midwest where they initially took up land. They later pulled up stakes and headed for new land on the Minnesota frontier. They came through areas where diversified agriculture involving crop and livestock was the norm. They arrived at the right time, because new markets for their products were established in the lumber camps and Twin Cities to the north, and soon the Civil War (1861-1865) would create a tremendous demand for wheat. Although somewhat perishable, wheat and flour can be shipped long distances with relative ease. The presence of the steamboats and growing rail network meant the farmers could get their crop to the market in good order. The prices were good and steadily improved. In 1861, flour sold for \$0.50 a bushel at the Minneapolis Exchange. The price tripled in three years. When the post-war decline in prices occurred, the farmers used mechanization to increase their production.

At first, the farmers had to transport their crop to the river towns, but soon interior markets developed. The chief problem encountered was storage. The river traffic ceased in the winter, and frequently, low water conditions in late summer interrupted shipping as well. As a result, farmers needed storage facilities and better shipping. The presence of products needing transport was an important factor in the rapid development of railroads in this region, throughout Minnesota, and the prairies beyond. The wheat production raced ahead through the 1870s but, by 1880, the dependence on one cash crop lessened, and the development of hog and beef markets caused farms to shift from small-grain production toward increasing acreage of corn. Eventually, the more efficient production systems of the Red River Valley would provide too much competition for the wheat growers of southeastern Minnesota. For a while, King Wheat ruled this part of the state, infecting everyone with excitement. Farmers, towns, and counties vied to be the first with some aspect of wheat production. In 1868, a reporter for *Harper's Weekly* visited the area and wrote a glowing account of traffic through the City of St. Charles. He wrote of a land of farms yellow with the gold grain, which formed the wealth of the rapidly growing young state. He stood on the

veranda of the hotel in St. Charles and watched a hiring fair in which the local farmers made competitive bids against one another for the service of the migratory farm hands who came to work as threshers. He reported the entire area to be covered by the fine, whitish dust of the wheat harvest. According to him, the entire community at St. Charles more or less had wheat on the brain. Not all the land was used to grow wheat, but the crop was fundamentally important because it was the region's first major export crop and provided the economic base for the development of mills, ports, harbors, roads, and railroads (10).

## Field Patterns and the Land Survey System

In her preface to *Order Upon the Land; The U.S. Rectangular Land Survey and the Upper Mississippi Country*, Hildegard Johnson wrote:

*“Most Americans and Canadians accept the (land) survey system that so strongly affects their lives and perception of the landscape in the same way that they accept a week of seven days, a decimal numerical system or an alphabet of 26 letters – as natural, inevitable, or perhaps in some inscrutable way, divinely ordained. . . in contrast foreigners find the system most striking, particularly in its landscape impact. The visual effect from the air has been pointed out by Europeans: to them the section landscape is the typical American landscape.” (11)*

About 69% of the land in the 48 coterminous states is organized according to the rectangular survey. It is generally accepted that the survey was an advantage for settlement because newcomers could easily and with great certainty locate the land they claimed. When the U.S. was organized, the federal government determined that public land should be systematically surveyed and subdivided before being opened for settlement. The Land Ordinance of 1785 spelled out the township and range rectangular survey. This mandated survey lines oriented in the cardinal directions, and the land was further divided into townships, squares with six-mile sides. Townships were subdivided into 36 sections, each section one mile square. Sections were further divided into squares of halves and quarters. As a result, the landscape attained its familiar checkerboard pattern. The straight lines and right angles define fields, roads, streets, subdivisions, towns, and

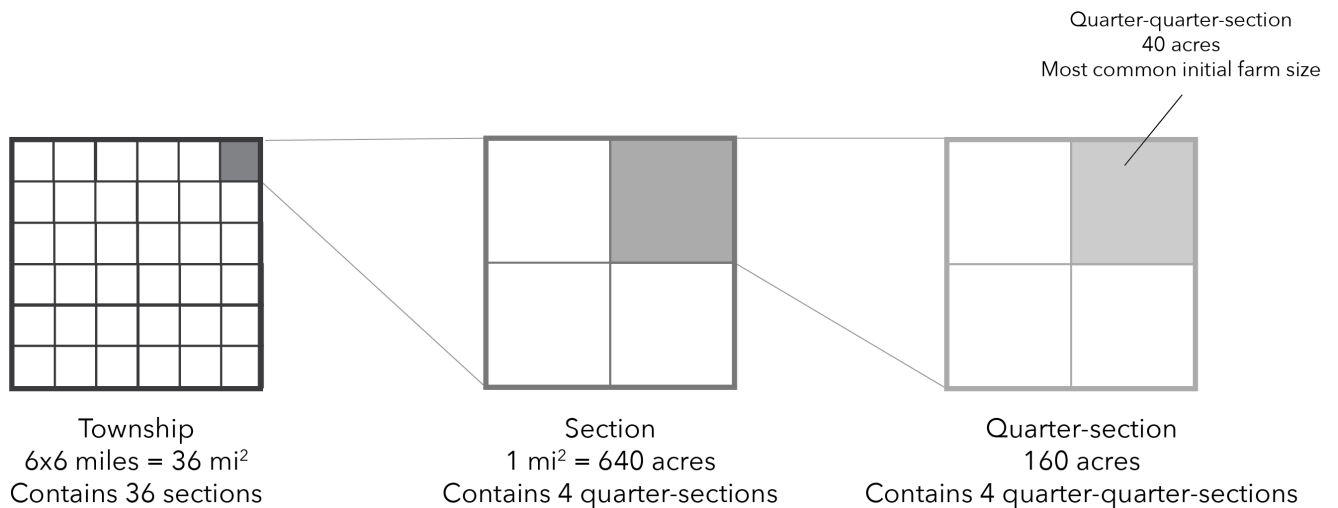


Figure 1.4: The Square Land Survey of the 1785 Land Ordinance.



counties. The result has been the open settlement pattern of rural America. Farmers live on isolated farmsteads rather than in compact rural settlements, as is the case in much of Europe. At first, farmers bought 40 acres. This produced a rather dense pattern of farms, but as time passed and agriculture became increasingly mechanized, the small farms of the horse era have been absorbed into the larger farms of the tractor era. Today, the average farm size in Minnesota is 350 acres. We will see many examples of the farm enlargement process along this route.

Other survey systems and settlement patterns do exist within the U.S. The New England village represents the English notions of rural communities. The French and Spanish developed a system of long lots that promoted settlement along roads or rivers. In these areas, narrow strips extended away from the river or road. The Mormons used a village form of settlement as well. However, the Midwest is the land of the squares.

## Plows and Fences

In order for the agricultural settlers to prosper, they had to convert the oak savannah and long grass prairies to cropland. They first had to break the prairie sod and build fences against the free ranging animals. Breaking the centuries-old sod was tough work. Done by hand in the spring and summer, it was described as deviling. A team of very strong oxen would be yoked to a massive, iron plowshare that weighed between 60 to 125 pounds. Only a skilled hand could plow in a straight line. Then John Deere, a blacksmith in Illinois, made a plowshare from saw blade steel, and created a one-piece plow and moldboard. This plow was able to break the plains. The moist prairie soil did not cling to the blade, and sod was turned over neatly. Soon, thousands of farmers were using the John Deere plow, and the grasslands were converted to arable soil in less than a decade. No longer concerned with breaking virgin soil, most farmers have adopted a minimum tillage program, which uses chisel plows. They enable crops to be planted without completely turning over the topsoil. Sometimes called conservation tillage, this technique preserves soil nutrients and moisture, and prevents erosion (12).

Another individual in Illinois solved the solution for the problem of providing economical fencing. Before the Civil War, farmers made traditional split rail fences like those developed in Virginia. However, these fences used large amounts of timber, so could not be used on the plains. The railroads made it possible for the sawmills to ship posts and boards long distances and, thus made it possible to produce cheaper but less permanent wooden fences. There was a major experiment to use hedges rather than fences. Osage Orange, a tough woody shrub, was promoted widely in the Midwest. Hedges took four years to be livestock proof. After that, they needed trimming and of course, they shaded the adjacent soil, used nutrients and housed many pests. Single wire fences replaced hedges and woven wire fences. At first, most people thought some sort of wire mesh or string of plain wire would work, but that failed. The single strand of wire expanded in the summer and contracted in the winter. Hanging limp in the hot sun, they were not stock proof, and the wire mesh was plagued with rusting as well as contraction issues. In 1874, the breakthrough occurred near DeKalb, Illinois, when two or three strands of galvanized wire were twisted around sharp

barbs. Soon, a machine for making the wire was developed and in 1900, Midwesterners sold barbed wire around the world. Scholars have argued that barbed wire made the small homesteads on the prairies both possible and profitable (13).

Agriculture has changed dramatically over the years. Barbed wire fences are being removed because livestock are seldom pastured and never allowed to run free. Dairy cattle, hogs, turkeys, and chickens are all bred in houses. During the administration of Agriculture Secretary Earl Butz (1971-1976), farmers were urged to plant from field line to field line, and the slim barbed wire fences were removed to get more room. Traveling through these agricultural areas, watch for fences. Most are now relics.

## Rural Electrification and Power Co-Ops

One of the greatest changes in the rural landscape was the connection of all rural people to the national electric power grid. This process was a difficult struggle that lasted nearly fifty years. Because private electric utilities refused to serve the rural landscape, it was necessary to develop a public power system. Rural electrification, therefore, was not just a geographic question of getting supply to demand; it was embroiled in arguments over public versus private control. Although the big farms and irrigated operations in the West Coast states were served by private utilities in the 1920s, the situation was entirely different elsewhere. In 1930, rural regions in the north central states averaged 13% electrified, while in the south only 2% of rural houses and farms were electrified. These households experienced a life without convenience. They relied on hand labor and animal power, with only a few having cars and tractors. Before World War II, only 10% of farms in the U.S. had electricity because the private sector was unwilling to make an investment in lines and equipment necessary for extending service to rural areas. Although there was great pent-up demand for power, the Roosevelt Administration did not bow to pressure from congressional representatives who had known the hardscrabble life on farms in the South and Midwest until 1935. The fundamental policy decisions were still not resolved until the late 1940s.

The leaders of the agricultural sector insisted that service should be provided, and turned from the private sector to cooperatives. It appears that the Stony Run Light and Power Company at Granite Falls, Minnesota, established in 1914, was the first power co-op in the U.S. Other sorts of co-ops were proving the vitality of the organization type, so leaders like Senator George Norris of Nebraska looked to them for the answer. Change came with Morris L. Cooke, a reformer who fought at the national level. He was hired by FDR as a consultant in the Public Works Administration (PWA) to advise the President on conservation and power issues. FDR agreed that every home and farm should have electric service, but he would not commit to providing it. Things changed when the Tennessee Valley Authority's experience with power co-ops proved to be successful, and the agriculture lobbying groups put pressure on the administration to do something about the lack of power. As a result, in 1935, FDR established the Rural Electrification Authority (REA) within PWA to promote employment through work on power lines. As a relief agency, REA had to spend 25% of its budget on labor, of which all but 10% had to come from unemployment rolls. This crippled the agency's work

ability, so Cooke decided the REA could best function by not building lines directly, but instead financing the projects of others. They tried unsuccessfully to work with the private sector, so as a last resort, they dealt with rural co-ops. The REA not only funded co-ops, it also advised farmers on how to organize and manage their operations. In 1936, REA became a permanent organization and was allocated money for ten years through legislation authored by Senator Norris and Representative Sam Rayburn of Texas. Both men had been reared on farms and knew the significance of the issue. The war years slowed down the progress of electrification, and in 1944, 55% of the farms in the U.S. were still without electricity. Plans were underway for a huge effort to remedy that situation as soon as the war ended.

President Truman, with support from the national farm organizations, pushed hard for the completion of the task begun a decade earlier. The post war boom made the provision of power profitable for all involved. The first appliances purchased by farmers were typically a radio and an iron. Incandescent lights replaced the hand held lantern and thereby decreased the time needed to do chores by 50% and greatly increased the safety of farm work. However, surveys conducted at the time indicated that indoor plumbing was the most popular improvement made by electricity. No more trips to the outhouse, and no more pumping and carrying buckets of water. After sundown, glowing yard lights in all rural-homes indicated the success of the efforts to electrify rural America. It may have been the most significant technological change for rural life in the U.S. since the steel plow and gasoline engine (14).

## Land Use Planning in the Twin Cities Metropolitan Area

Planning in the Twin Cities Metropolitan Area is unique. This is in large part due to the adoption of the Metropolitan Land Planning Act by the State of Minnesota and the subsequent formation of the Metropolitan Council, the regional policymaking body, planning agency, and provider of essential services for the Twin Cities metropolitan region (15). Its mission is to ensure efficient and economic growth within the seven-county metropolitan area. In addition, it has operational responsibilities related to the regional systems. The legally defined roles in regional policy and planning, as well as operational functions for regional systems are unlike any other regional planning agency in the nation.

Following each decennial census, the regional planning effort starts with adoption of a regional development plan. The current plan, called Thrive MSP 2040, established a regional vision and land use development policies through 2040. The regional system and policy plans follow policies that reflect Thrive. The Council has a System Plan for Parks, Water Resources, and Transportation. Policy plans are adopted for Housing and Water Supply. The Council is also responsible for reviewing local comprehensive plans and providing technical assistance to communities as they work through their local comprehensive planning process.

The plans of each jurisdiction in the seven-county area build upon the regional planning vision. Local comprehensive plans reflect regional policies at the same time as identifying important local goals and objectives. This approach allows both the individual community and the region to succeed.

The MUSA Line delineates the boundary between urban and rural planning categories. Property outside of the MUSA Line is not eligible for sewage treatment and is classified as rural (although some towns do have sewer service). The rural planning designations can be divided into four types (17). Their descriptions are as follows:

### 1. Rural Centers and Rural Growth Centers Serving the rural areas as small town centers of commerce

Rural Centers are local commercial, employment, and residential activity centers serving rural areas in the region. These small towns are surrounded by agricultural lands and serve as centers of commerce to those surrounding farm lands and the accompanying population. Although smaller in scale than urbanized communities, Rural Centers provide similar development patterns and locally accessible commercial services for the surrounding area. The 2030 Plan included Rural Growth Centers as an additional categorization, which are Rural Centers interested in expanding.

### 2. Diversified Rural Protecting land for rural lifestyles and long-term urbanization

Diversified Rural communities are home to a variety of farm and nonfarm land uses including very large-lot residential, clustered housing, hobby farms and agricultural uses. Located adjacent to the Emerging Suburban Edge of the Urban Service Area, Diversified Rural designation protects rural land for rural lifestyles today and potential urbanized levels of development sometime after 2040. Large portions of communities in the Diversified Rural area also contain prime agricultural soils, located primarily in Scott and Washington Counties.

### 3. Rural Residential Limiting unsustainable growth patterns

Rural Residential communities have residential patterns characterized by large lots and do not have plans to provide urban infrastructure, such as centralized wastewater treatment. Many of these communities have topographic development limitations and a development pattern with lot sizes that generally range from 1 to 2.5 units per acre. Therefore, these residential densities do not support economical extension of wastewater services.

### 4. Agricultural Areas Preserving large swaths of farmland

Agricultural communities encompass areas with prime agricultural soils that are planned and zoned for long-term agricultural use. These communities are home to the bulk of contiguous lands enrolled in the Metropolitan Agricultural Preserves and Green Acres Programs or cultivated for commercial agricultural purposes. The Agricultural Areas, found mostly in Dakota, Scott, and Carver Counties, contain about half a million acres planned and zoned by local communities to maintain agriculture as the primary long-term land use. In these areas, the Metro Council will focus existing regional incentives and assist with local initiatives to preserve high-quality soils for existing or future agricultural use. Investments in regional infrastructure such as roads, wastewater treatment, and parks and open space will be for rural levels of service consistent with the intent to maintain agriculture. Growth in the Agricultural Areas should be consistent with regional forecasts.

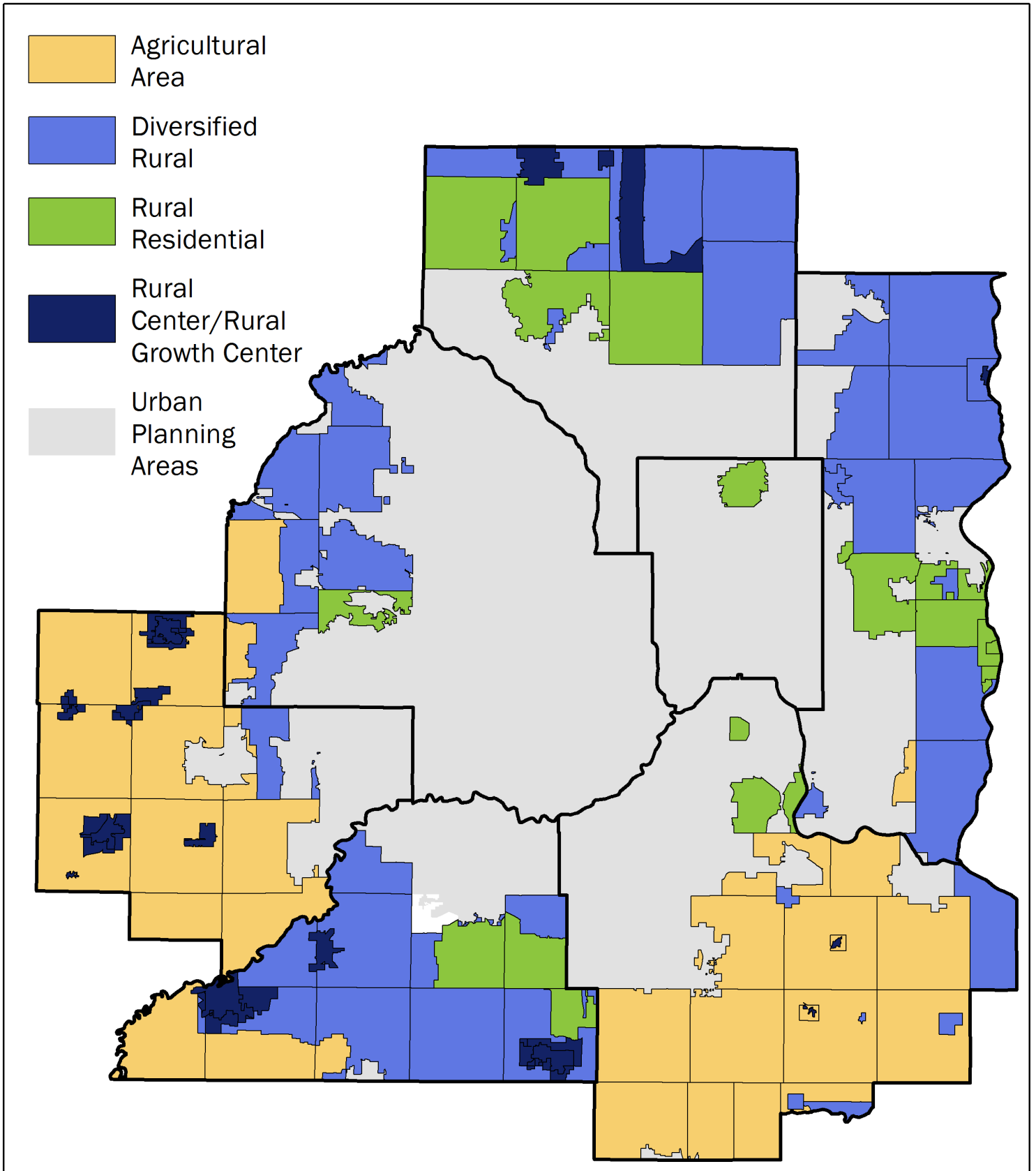


Figure 1.5: Planned Rural Land Use in the Seven-County Metro Area, 2030 Plan.  
 (source: Metropolitan Council)

As the Council updates its system plans, the feasibility of providing regional services in response to potential development of agricultural areas post-2030 will be examined. The Council will partner with communities to ensure that the feasibility analysis meets community and regional needs. The future of the agricultural areas depends on cooperation among several levels of government.

## Regional and Local Planning

Both regional and local governments have cooperative roles in the Metropolitan Council's land use planning (17). When it comes to agricultural planning, their roles are:

### The regional planning authority's role

- Promote the use of the Agricultural Preserves and Green Acres programs to preserve prime agricultural soils and land uses by supporting local efforts that maintain agricultural land uses through 2040.
- Partner with communities to plan for post-2040 development growth in a manner that protects farmland and the regional agricultural economy while accommodating efficient expansion of regional urban infrastructure in areas where forecasts project market demand
- Promote agricultural practices that protect the region's water resources, including both surface water resources and groundwater resources.
- Provide information to communities about how to incorporate environmentally sensitive development techniques into farm-related construction
- Support agriculture as a primary long-term use to protect the region's agricultural economy, to provide economic opportunities for farmers, and to promote local food production.
- Support connections between the Agricultural Areas and other areas within and outside the region that promote local agribusiness, promote safe travel, and ensure efficient distribution of freight.
- Promote the use of the Green Acres and Agricultural Preserves programs to preserve prime agricultural soils and maintain agricultural uses as a long-term primary land use.

### The counties' and townships' role

- Limit residential development and adopt zoning ordinances and/or other official controls to maintain residential densities no greater than one housing unit per 40 acres.
- Support enrollment in the Agricultural Preserves and Green Acres programs to preserve prime agricultural soils and agricultural land uses.
- Maintain agricultural land uses through at least 2040 as a primary long-term use to preserve prime agricultural lands and to preserve land for efficient expansion of post-2040 regional infrastructure where appropriate.
- Manage land uses to prevent the premature demand for extension of urban services, and so that existing service levels (such as on-site wastewater management, gravel, and other local roads) will meet service needs.

- Develop and implement strategies for protecting farmlands, such as exclusive agricultural zoning and agricultural security districts.
- Support agricultural uses as primary long-term land uses and consider allowing agricultural-supportive land uses in local comprehensive plans.
- Consider opportunities for smaller-acreage agricultural operations to support food production for local markets.
- Implement programs and best management practices that conserve and enhance soil and water resources to ensure their long-term quality and productivity.
- Identify and protect locally important agricultural areas, in addition to prime agricultural lands, to provide a range of economic opportunities.

**Important to know:** Minnesota taxation policies are designed to help preserve agriculture in the metro area.

## Metropolitan Agricultural Preserve Program

The Metropolitan Agricultural Preserve Program, established by the Minnesota Legislature in 1980, is a tool for protecting farmland in the Twin Cities Metropolitan Area (16). Local governments identify long-term agricultural lands and establish protective zoning. Property zoned long-term agricultural by the local community, with a maximum residential density of one house per 40 acres, is eligible for this property tax program. Owners sign an eight-year perpetual covenant/agreement to leave the property in agricultural use, and farm using acceptable practices as approved by the County Agricultural Service. The Agricultural Preserve market value is based on sales of agricultural property in non-metropolitan counties as determined by the Minnesota Department of Revenue. All owners of qualifying agricultural property may apply regardless of homestead status. The property must:

- Be zoned long-term agricultural by the local community, with a maximum residential density of one house per forty acres.
- Be 40 acres in size, however, smaller tracts may qualify in certain instances.

There is no deferred tax like there is in Green Acres. Special assessments cannot be levied on Agricultural Preserve property. Annual property taxes are based on the agricultural market value only.

## Green Acres Program

Dakota County has also helped maintain agriculture with a property tax deferral program, called Green Acres (18). Agricultural property devoted to the "production for sale of agricultural products," may be eligible for the Green Acres program. Non-productive acres, such as woods, waste and sloughs, are most likely not eligible for Green Acres. The property must:

- Be at least 10 acres in size.
- Be primarily devoted to agricultural use.
- Be homestead, farmed in conjunction with the homestead property; or the property must have been in the applicant's family for at least seven years.

The County Tax Assessor determines two values on Green Acres property:

- The ‘actual market value’ based on sales of similar property, which may be influenced by development pressures.
- The ‘agricultural value’ based on sales of agricultural property not impacted by other influences, such as development.

Taxes are calculated on both market values, but paid on the lower, agricultural value each year. The difference between the tax calculated on agricultural market value and the actual market value is deferred until the property is sold or no longer qualifies for the program. When the property is sold, or no longer qualifies, the deferred tax may be due for three years, on the part sold or no longer qualifying.

## Northfield

This city had a population of 20,000 in 2010. It was founded by immigrants from New England known as “Yankees,” as part of a New England colonization to expand in what was then the far west. Since its founding in 1856, Northfield was an agricultural center with many wheat and corn farms. The city also supported lumber and flour mills powered by the Cannon River.

Northfield has also been a center of higher education since its early years. Carleton College (then Northfield College) was founded in 1866 by the Minnesota Conference of Congregational Churches, whose congregation consisted of the “Yankee” settlers who had largely founded the town. Nearly a decade later, in 1874, St. Olaf College was founded on the western edge of town by Norwegian Lutheran immigrant pastors and farmers who were eager to preserve their faith and culture by training teachers and preachers (19).

## The Cannon River

The Cannon River is a tributary of the Mississippi River. It flows 112 miles from Lake Tetonka near Waterville, to Red Wing, all in Minnesota. The river flows through Northfield, and has a few rapids. In the mid-nineteenth century, the river was used to run flour mills. Today, the river provides scenic views of surrounding farmland and the river valley, with natural

parks such as Sakatah Lake State Park, the Sakatah-Singing Hills Trail, and the four-season asphalt pathway, which was repurposed from the Cannon Valley Railroad built in the 1880s.

During the 1970s, many railroads closed and their tracks abandoned. It appeared that the national railroad network that took generations to establish could be broken into several distinct pieces. Once fragmented it would be essentially impossible to reassemble. In 1983, Congress enacted the National Trails Systems Act or the “Rails-to-Trails Act,” which enabled the preservation of railroad corridors for interim trail and future rail use. These rights of way are ideal for cycling because of their gentle grade, and many of them run along rivers or through other scenic landscapes. Today there are approximately 22,000 miles of these trails in the U.S. They are important tourist destinations and growing in popularity. Minnesota has about 4,000 miles of trails. Trail-based tourism is a significant part of the economies of many Midwestern communities (20).

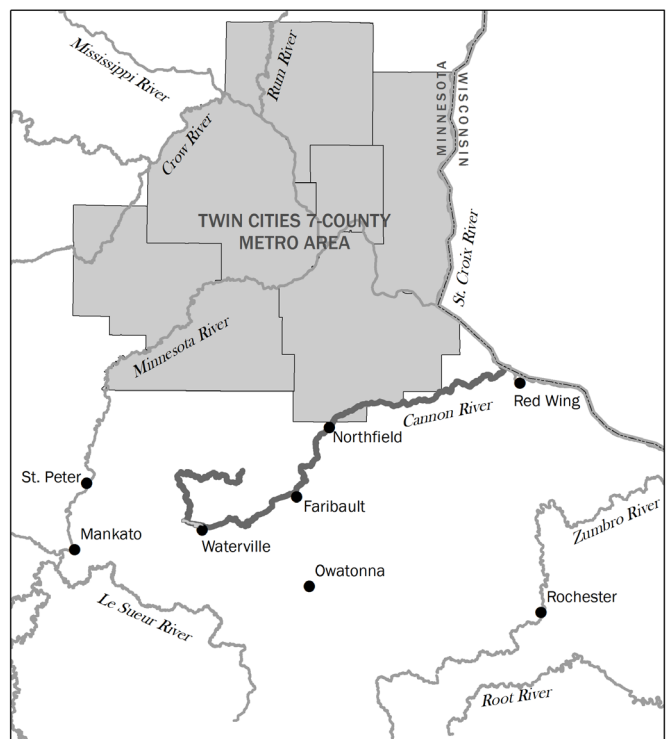


Figure 1.6: Location of the Cannon River.

## FIELD VISITS

### Main Street Project, Regeneration Farms Project

9:00 am - 12:00 pm

<https://mainstreetproject.org/>

Main Street Project is a project that introduces regenerative farming practices to Minnesota and the U.S. It is a poultry-focused form of Agroforestry that uses practices that regenerate the soil and manage the energy cycle in a manner that is not only environmentally sound, but socially and commercially viable.

### Lunch at St. Olaf College

12:00 pm - 1:15 pm

<https://wp.stolaf.edu/>

St. Olaf College is a private co-educational, residential, four-year, private liberal arts college in Northfield, Minnesota, U.S. It was founded in 1874 by a group of Norwegian-American immigrant pastors and farmers, led by Pastor Bernt Julius Muus. The college is named after the King and the Patron Saint Olaf II of Norway, and is affiliated with the Evangelical Lutheran Church in America.

# FIELD VISIT

## HAFAs Farms, Hmong American Farmers Association

1:45 pm - 3:00 pm

<https://www.hmongfarmers.com/>

The Hmong people are an ethnic group from East and Southeast Asia. They began coming to Minnesota in 1975 as refugees from destructive wars in mostly Laos and Vietnam. The Hmong community in Minnesota is the second-largest community in the U.S., with over 66,000 residents.

Created in 2011, the Hmong American Farmers Association (HAFAs) is a non-profit in Minnesota whose goal is to improve the capacity and economic prosperity for these immigrants. HAFAs works with over 100 Hmong farmers that range from the first to even the third generation. It aggregates and sells members' produce through community-supported agriculture (CSA) shares, schools, retailers, and other institutions. It also works to increase their access to capital and credit, trainings, and innovative research. In recognition of their efforts, it received the 2017 Bush Prize for Community Innovation.

Hmong farmers played a major role in the revitalization of the St. Paul and Minneapolis Farmers Markets, and introducing new foods to the Minnesota palate such as Thai chili peppers and Chinese bok choy. In 2013, the association acquired the HAFAs Farm, a 155-acre research and incubator farm. HAFAs sub-leases the land to experienced farming families, and maintains multiple research and demonstration plots here. The organization has implemented numerous sustainable agricultural practices such as composting, succession planting, installing grass roadways, laying down erosion blankets, planting waterway pollinator habitats, restoring oak savanna, and keeping bees.

## Northfield Companies

### Malt O' Meal

Although we will not be visiting the headquarters, Malt O' Meal is an important landmark representative of Minnesota's historic relationship with wheat. Minnesota's southern Mississippi River towns, including Northfield, served as "wheat counties". With the introduction of the railroad and the use of the Mississippi River, Minnesota was able to serve as the wheat hub of the U.S.

When wheat was king, one company that rose was the Campbell Cereal Company. Created by John Campbell, a miller in Owatonna, Minnesota, the company invented a combination of malted and farina wheat hot breakfast cereal that was intended to compete with Cream of Wheat. This product was

eventually called Malt-O-Meal. In 1927, the company moved production of its cereal to its current location in Northfield, Minnesota, and in 1953, it was renamed the Malt-O-Meal Company. In 2012, the Malt-O-Meal Company rebranded as MOM Brands, and continues to make hot and cold cereals, marketing its products in at least 70% of the country's grocery stores (21).

## Syngenta

Although we will not be visiting the inside of the facilities, we will drive by a seed-supplying center of the largest crop chemical producer in the world. This company is Syngenta, a Swiss-based global company that produces agrochemicals and seeds. Syngenta was formed in 2000 by the merger of two large biotechnology companies: Novartis Agribusiness and Zeneca Agrochemicals. Today, Syngenta has eight primary product lines that distribute worldwide. Five of these product lines are dedicated for pesticides, and include selective herbicides, non-selective herbicides, fungicides, insecticides, and seed care. The three other product lines are for seed products, and include crops such as corn and soya. This facility focuses on corn (22).

## The Vermillion River

The Vermillion River meanders through Scott and Dakota Counties, emptying into the Mississippi River just south of Hastings. In the nineteenth and early twentieth centuries, the river was used for waterpower, supplying power to gristmills. Today, 13.5 miles of it are designated as a trout stream, which is unusual for a river so close to a metropolitan area. The portion of the river that supports trout is upstream, around the towns of Farmington and Empire. Near the town of Vermillion, the water becomes too warm to support trout.

The Vermillion River Watershed Joint Powers Organization (JPO), created by Dakota and Scott Counties, works with 20 cities and townships to maintain the quality of the river. The major issues and priorities are:

1. Surface water quality is threatened or impaired.
2. Water quality improvement competes with other public, private, and individual priorities. There is a perception that costs of improving water quality are not allocated fairly.
3. Groundwater quality is at risk, with known contamination above health risk limits for nitrate in some areas.
4. Increasing consumption of groundwater threatens the future water supply.
5. Changing precipitation patterns, decreased rainwater infiltration, and increased stormwater runoff have contributed to more intense fluctuations in river flow rate and volume.
6. Public awareness and specific knowledge on the impacts of daily activities and appropriate stewardship is lacking.
7. Several federal, state, and local agencies manage specific aspects of water protection, and limited coordination and communication among these agencies can create inefficiencies and cause confusion.
8. Minnesota's climate is getting warmer and wetter,

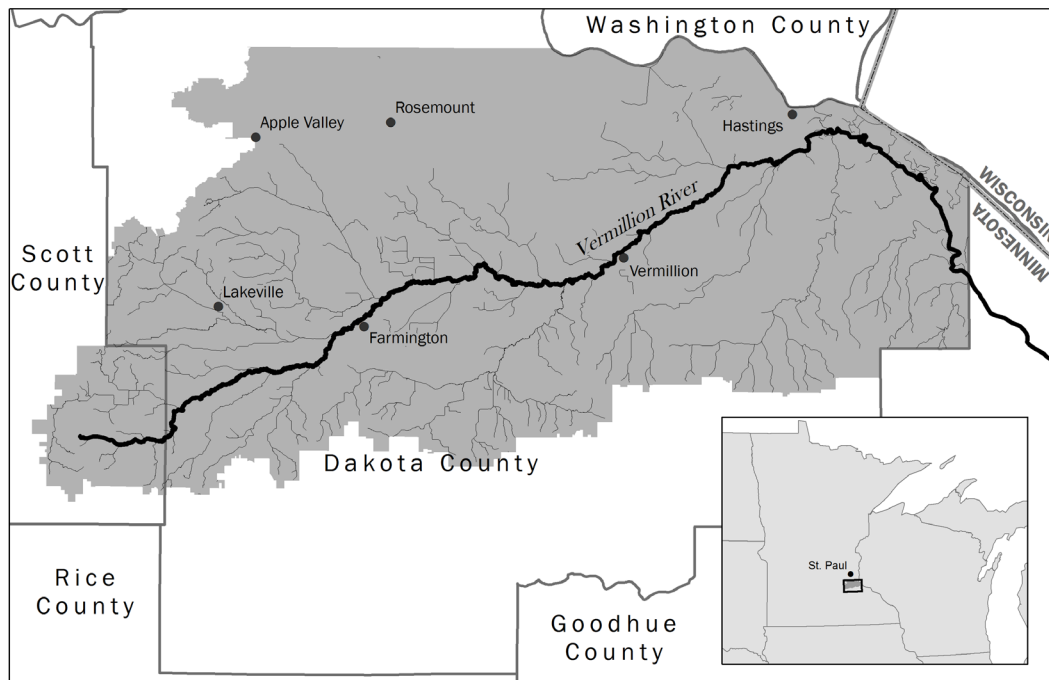


Figure 1.7: The Vermillion River Watershed District.

which poses a threat to water quality, wildlife, and infrastructure.

9. The Vermillion River Watershed JPO is a “young” organization in a dynamically changing landscape and has not always been able to fill gaps and address new opportunities.

10. Sensitive biological resources -- plants, fish, insects, and wildlife -- in the Vermillion River are not as healthy as those in reference rivers are.

The goals of the watershed planning effort are:

- A. Protect or restore water quality in lakes, streams, and wetlands.
- B. Protect and restore groundwater quality.
- C. Maintain a sustainable water supply.
- D. Address more intense fluctuations (up and down) in river flow rate and volume.
- E. Improve public awareness and stewardship of water resources.
- F. Improve watershed resilience to changing precipitation and temperature patterns.
- G. Protect or restore sensitive biological resources, such as plants, fish, insects, and wildlife. (23)

## Dairy Barns

The dairy or basement barn style originated in upstate New York and spread throughout the Great Lakes region. Cattle and horses occupied on the ground floor. The second floor was designed to hold hay. The structure’s walls were frequently masonry or stone. At the end of the building was usually a cylindrical silo for the storage of chopped corn call silage. As years passed and herds enlarged, farmers added silos. Frequently, historic dairy barns are divided into categories by the types of roofs they have. The decision as to which roof type to have was often based on the storage needs of the farmer, his or her financial position, and the availability of framing craftsmen (24).

## Gambrel roof style

Due in large part to classic children’s books such as *The Big Red Barn*, the image of a dairy barn to many or perhaps most people is a wood-framed, gambrel-roofed building painted red. The gambrel, or two-slope gable roof, was introduced to barn construction in the post-Civil War period. By the late nineteenth century, eastern farmers began crowning their wood-framed barns with this roof. Also known as a curb roof, the double slope permitted a larger capacity hayloft without increasing the heights of the sidewalls of the barn. The gambrel roof reached the height of its popularity in the early twentieth century and was common throughout the eastern and Midwestern dairy belt.

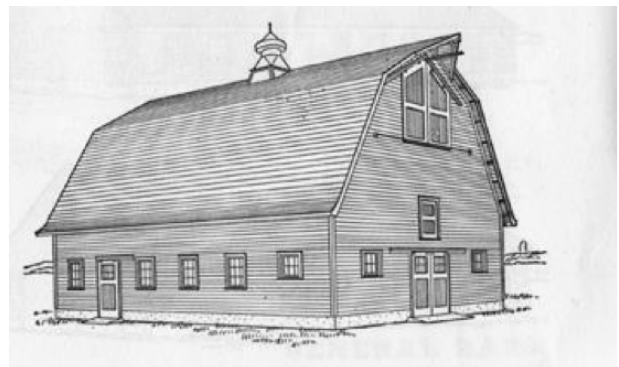


Figure 1.8: Gambrel-Roofed Barn. (source: USDA, 1939)

## Gothic roof style

Gothic arched barns are most common in the upper Midwest, particularly Wisconsin. Early arched roof barns used curved rafters fabricated from single pieces of wood, while later examples used laminated rafters, constructed of numerous pieces of wood. Dimensions of Gothic arch barns offered by Sears Roebuck mail order company ranged from 40 feet long and 24 feet wide to 140 feet long and 40 feet wide.



Figure 1.9: Gothic-Roofed Barn. (source: USDA, 1939)

## Modern dairy barns

This is an example of a modernized dairy facility. The old barn was removed, but the silos remain. The increased size of the silos tell us of the expansion of the operation. Contemporary barns do not store hay, so they do not need a hayloft. They have curtain walls that can be opened in hot weather to help cool the cattle. There are also several granaries linked by augers to enable the farmer to prepare the rations for the animals.



Figure 1.10: Modern Dairy Barn. (source: David A. Lanegran)

## The Koch Pine Bend Refinery

The Pine Bend Refinery, located 10 miles north of the farm, warrants brief discussion. Receiving its oil from Canada, the refinery is the country's largest facility for processing oil that contains high sulfur content. As a result, an adjacent large sulfuric acid plant makes use of the sulfur removed during the cracking of the crude oil. The Pine Bend Refinery is the largest oil refinery in Minnesota. It is notable for being the largest refinery in the U.S. to be located in a state without any oil wells. Overall, it ranked 14th in capacity in the country as of January 1, 2005, with an input capacity of 265,000 barrels (42,100 m<sup>3</sup>) per day. Currently, the facility is owned by Flint Hills Resources, a subsidiary of Koch Industries. The Great Northern Oil Company first constructed the plant in 1955. Koch purchased a controlling interest in the plant in 1969. Since then, the input capacity has been tripled.

Most petroleum enters and exits the plant through pipelines. The incoming crude oil comes predominantly from oil fields in Alberta, Canada, and is brought from the northwest to the facility through

the Lakehead and Minnesota pipelines. Additional crude comes from the south via the Wood River Pipeline, though plans are in place to reverse the flow of that line. The plant has a dedicated pipeline to the MSP International Airport that provides much of the jet fuel for aircraft. Another major exit route for distilled products is through Wisconsin, which sends fuel eastward. Fuel is also distributed by semi-trailer trucks, railroad cars, and, occasionally, river barges. About 70% of the gasoline fuel used in Minnesota comes from Pine Bend and the nearby St. Paul Park Refinery, while most of the rest comes from the Mandan Refinery in North Dakota and the Superior Refinery in Wisconsin. About 40 to 50% of Pine Bend's output is used within Minnesota. Flint Hills has recently completed a \$100 million expansion to increase capacity at the plant to about 330,000 barrels (52,000 m<sup>3</sup>) per day (25).

## Hastings

Hastings is a city in Minnesota located near the confluence of the Mississippi, Vermillion, and St. Croix Rivers. As of 2010, the population of the city was 22,172. The area was first settled by a military detachment sent from Fort Snelling to guard a blocked shipment of supplies in 1820. However, growth in the region began after the Treaty of Mendota of 1851, which opened the area for white settlement. In the mid-nineteenth century, Hastings, along with nearby cities Prescott, Wisconsin, and Nininger, Minnesota, were areas of tremendous land speculation, and billed as even a potential "New Chicago." Hastings was favored over the other locations due to its well-drained, good riverboat port, and a nearby hydropower resource at the falls of the Vermillion River. However, the Panic of 1857, a financial panic in the U.S., caused by the declining international economy and over-expansion of the domestic economy, put an end to this metropolitan dream (26).

## Washington County

On the other side of the Mississippi River from Hastings is Washington County. Situated along a large portion of the St. Croix River, Washington County is the fifth-most populous county in Minnesota, with a population of 238,136 in 2010. Due to its location between the St. Croix River (which functions as the Minnesota/Wisconsin border) and the Twin Cities, Washington County serves as a large commuter county and is included in the Minneapolis-St. Paul Metropolitan Statistical Area.

Washington County has a deep history in Minnesota. The county was one of the nine original counties created when the Minnesota Territory was organized in 1849. It was settled early due to its location on the St. Croix River, which provided a means of transportation to move people upstream, while also moving logs downstream into the Mississippi River. Over time, Washington County became primarily agricultural. In the twentieth and twenty-first centuries, the population greatly increased with the suburban expansion of St. Paul. Today, Washington County is a large destination for local tourism, with points of interest including Afton State Park, Afton Alps Ski Area, Gateway State Trail, and William O'Brien State Park (27).





Figure 1.11: Location of Washington County.

## I-94 and the Interstate System

At Interstate 94, we return to a discussion of the American highway system. Presidents Roosevelt, Truman, and Eisenhower all favored a national superhighway system. They and their advisors had to respond to the tremendous pressure put on government to do something about the horrors of traffic congestion. In 1905, there were 78,000 motor vehicles registered in the U.S., and everyone looked to cars and trucks as the saviors of society. The trucks would free the farmer, and cars would liberate the middle class from the miseries of riding mass transit. Streetcar riders were said to be packed in like sardines and lubricated with perspiration, while pickpockets and all sorts of “undesirables” infested the mass transit system. The greater population was calling for comfort and safety.

President Eisenhower (served 1953-1961) was the key to finally developing a plan. He kept insisting that an agreement could be found, and pressured his cabinet and Congressional leaders for a solution. In 1958, Congressman Hale Boggs, from Louisiana, and George Fallon, of Maryland, put the package together, and the Interstate Highway Act of 1956 was passed. The highway engineers who had controlled road construction in the past were given the authority to build the system. Because the system would be funded by user taxes, priority was given to places with high traffic. The process was remarkably free from the sort of pork-barrel politics that often dominated public works programs.

In 1965, criticism of the freeway system reached a crescendo. It was fashionable to criticize all phases of government activity during the 1960s, but freeway opponents were not just anti-establishment radicals. They wanted to resolve issues that were a part of early discussions of highway construction, but were ignored during the rush to get the system built. There is no doubt that the national freeway system produced greater economic development, dramatically increased the mobility of motorists and truckers, and enabled millions of people to move from the inner

neighborhoods to the suburbs. By the mid-1960s, the rules of the game had changed. Americans were concerned about the environmental impact of the great gashes through the landscape made by the highway contractors and the atmospheric pollution caused by the traffic. Urban residents complained bitterly about the routes that appeared to favor the comfort and convenience of suburbanites at the expense of the neighborhoods occupied by the poor and African Americans. President Nixon’s administration wrested control of the freeway building from the engineers and introduced new issues to the discussions of route selection.

In 1970, President Nixon determined to try to develop mass transit options for urban residents. In a message to Congress, he said that for the poor, aged, young, and disabled, adequate public transit was the only answer. He intended to have federal programs shoulder the burden of developing mass transit on the scale of the highway program. In 1976, funds from the highway trust fund were finally made available for mass transit (28).

In the mid-1970s, issues of localism took over the highway construction business and the national highway program was overwhelmed. During the 1980s, opponents of freeways were able to stop the construction of particularly objectionable sections of the freeway network. In December of 1997, the State of Minnesota granted a franchise for the laying of an optic fiber system along the interstate. Once completed, the new communication system will be able to carry fantastic amounts of data at the speed of light. Perhaps this new system will decrease the need for people to agglomerate. If linked via this system, people may be able to telecommute, and the small towns of the upper Midwest may become increasingly popular. All indications point toward a continued growth in information management industries. Perhaps the optic fibers will have an impact on the middle landscape comparable to the electrification of the 1930s.

There is no doubt that the freeways solved the issue of intercity and interstate transportation, but the growth of population and numbers of motor vehicles have overwhelmed the freeway system in most urban areas. In the 1980s, real estate developers were complaining bitterly about traffic congestion to the suburbs. The political leaders of Minnesota have concluded to end freeway construction for the foreseeable future. Issues of sprawl and sustainability of communities have forced planners to rethink the freeways as a solution for urban transportation problems. The interstate system of about 42,400 miles carries half of the semi-trailer traffic, about one-fourth of the total truck traffic, and about one-fifth of the total traffic in the country. What will be next?

## The St. Croix River

Translating from “Holy Cross” in French, the St. Croix River is a tributary of the Mississippi River, approximately 169 miles long. The lower 125 miles of the river form the border between Wisconsin and Minnesota.

The history of the river begins with geologic forces going back 1.1 billion years. At that time, the Mid-Continent Rift rendered the middle of North America apart, creating a volcanic zone, which laid down layers of sand and minerals that eventually

made up the sandstone bluffs now seen along the river. In the last 20,000 years, glaciers scraped through these bluffs to carve the current path of the St. Croix River. The semi-nomadic Ojibwa, Dakota, and other American Indian Tribes, which lived mainly on wild rice, fish, and game, originally occupied the river valley. The first Europeans to arrive in the area in 1679 were French, and engaged in the fur trade. In 1837, the Ojibwe ceded a vast tract of land to the U.S. government in what is today north central Wisconsin and central Minnesota. With this treaty, the region was opened to logging, and the river was an important means of transportation for the lumber. During the 1840s, important sawmills were located along the river, and the industry continued to grow throughout the latter half of the nineteenth century. The lumber industry continued until the last major log drive in 1912, which marked the end of the rich white pine forests of the area. The river today functions as a popular recreational destination. Common uses include boating, fishing, camping, and canoeing. The towns along the river offer restaurants, shopping (especially antiques, books, and gifts), bed and breakfasts, historical tours, and other tourist activities (29). It is also a National Scenic Riverway under the protection of the National Park Service. The National Wild and Scenic Rivers System was created by Congress in 1968 to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. It includes three types of river areas:

*Wild River Areas* are those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

*Scenic River Areas* are those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

*Recreational River Areas* are those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past. The St. Croix is a scenic and recreational river (30).

## St. Croix County

As we cross the St. Croix River, we enter St. Croix County, Wisconsin. In 2017, St. Croix County had an estimated population of 88,029, and between 2000 and 2010, it was the fastest-growing county in Wisconsin. The county is 97.85% White, with 38% of the households having children under the age of 18 (31).

Today, St. Croix County and its cities, such as Hudson, are part of the Twin Cities commuter zone and rapidly growing. Hudson (St. Croix's largest city) has grown as a tourist destination with its historic downtown, along with the Phipps Center for the Arts, a regional performing arts center. The city also maintains a large marina for pleasure boats.

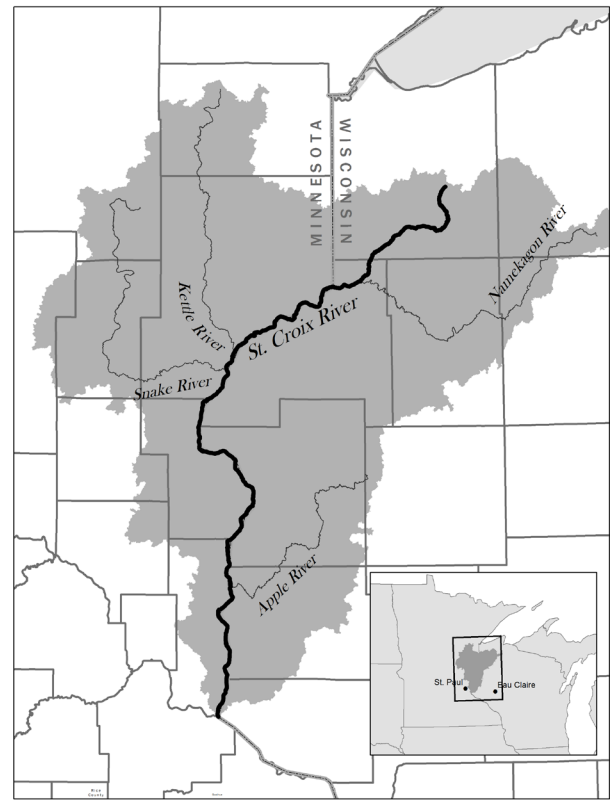


Figure 1.12: The St. Croix River Watershed.



Figure 1.13: Location of St. Croix County.

## Eau Claire

The City of Eau Claire is a northwestern Wisconsin city located about 85 miles east of Minneapolis-St. Paul. As of 2016, the population was 68,339. The city was founded near the confluence of the Eau Claire and Chippewa Rivers as three separate settlements, the first being in 1845. Its namesake is the original French name, "Eaux Claires," meaning "Clear Waters." The terrain of the city is characterized by river valleys, with steep slopes around the whole city. The city itself has a narrow crooked main street, bright with plate glass by day, glaring with neon lights at night; its many factories lie back along the tracks that

parallel the cramped and curving rivers. There are two lakes: Dells Pond and Half Moon Lake. Dells Pond is a reservoir created by a hydroelectric dam, and Half Moon Lake is an oxbow lake created as part of the former course of the Chippewa River.

In 1784, a trapper and trader named Le Duc was living here among the Sioux. Logging near the banks of the Chippewa began about 1822 and two decades later Jeremiah Thomas and Stephen S. McCann, first permanent white settlers, staked claims and built shanties here. In 1856, when word of the coming of the railroad arrived, Eau Claire County was organized, and settlers began coming in large numbers. From the beginning, the white pine of the Chippewa Valley became the foundation of prosperity in Eau Claire as well as in Chippewa Falls on the river above, and for years, lumbering interests and rivalries determined the life in both cities. Soon after settlement, an intricate series of conflicts arose over control of the many-branched Chippewa, main outlet for northwestern Wisconsin's wealth of timber. Dams and booms built at any one place on the river impeded the drive of logs to other communities downstream; quarrels based on this economic fact soon grew into feuds. When Eau Claire men proposed to build a dam in 1860, Chippewa Falls' interests fought the project in the legislature and courts for more than 15 years, only to lose eventually; and when Eau Claire sought incorporation as a city, Chippewa Falls again opposed strenuously but vainly.

Such civic rivalries were complicated by the conflicts of individual lumbermen, who formed and reformed alliances and stratagems without particular regard to community loyalties. These business conflicts centered chiefly on projects to develop Beef Slough, the great log harbor at the mouth of the Chippewa. The Beef Slough men wished to use the Chippewa only as a driving stream and to have all sawing done on the Mississippi. The dams, mills, and booms at Chippewa Falls and Eau Claire were a hindrance both to the business unity of the project and to its log drives, and the rivalry between loggers sometimes flared into open battle. In the spring of 1867, the firm of Bacon and Davis hired a hard-fisted crew of river men who smashed a whole winter's cut through the booms at the falls, sweeping all logs with their own toward the Mississippi. The great mass of timber, extending from shore to shore, swept toward the Eau Claire mills, but before it arrived, the sheriff and a posse of armed Eau Claire river hogs stopped the Bacon and Davis crew. Eventually the Mississippi River men, partly by battle and partly by compromise, attracted most of their rivals into the Beef Slough improvement company and settled the logging disputes.

When the railroad was completed in 1870, there were 22 saw-mills operating in Eau Claire. Then, as logging declined along the Chippewa, paper and pulp mills began to replace the saw-mills, and the flow of timber over the dam fell to almost nothing. In place of heavy saw-logs came pulpwood for paper and pulp plants; much of the water of the rivers was diverted to drive hydroelectric turbines. Factories making furniture, sashes and doors, and other wood products sprang up (32).

## University of Wisconsin-Eau Claire

University of Wisconsin-Eau Claire, or UWEC, is a public Wisconsin university located in central Eau Claire; there are about

11,000 undergraduates and 500 graduate students enrolled. Established in 1916, UWEC is a public liberal arts university that offers bachelor's and master's degrees. UWEC is organized into four colleges: the College of Business, the College of Arts and Sciences, the College of Education and Human Sciences, and the College of Nursing. The university is affiliated with NCAA's Division III and the Wisconsin Intercollegiate Athletic Conference (WIAC) (33).

## Eau Claire: Adapting to the Future

Jakob Otterson, UWEC student

Eau Claire today is a vibrant city, combining the natural beauty and small town feel of rural areas with the culture and services found in large cities. While it is a point of controversy whether Eau Claire can be called a college town, there is no denying that the university has had a massive impact on the character of the city. UWEC is constantly turning out new professionals, which provide the local businesses with a reliable, well educated workforce. Having a university seems to attract investment in cultural life that would be unsustainable without young people to breathe life into the area and university money to fund it. As such, the area near the university, while having more than its share of bars and "student-oriented" establishments, is also home to nice restaurants, comedy clubs, theaters, and boutique shops. It is not uncommon for a building to combine all of these attractions together.

A shop called the Local Store, while being mainly a boutique store targeted at tourists, has art galleries, book readings, live music, movie screenings, and other such things (34). This trend is accelerated by the city government's continued efforts to make Eau Claire into a "trendy" city, hoping to attract both tourists and residents by presenting the city as cultured. This is best demonstrated by the recent construction of the Pablo Center at the Confluence, a large building that houses a theater, art galleries, community rooms, and more (35). While this was and still is a controversial project due to the huge costs involved, this move is a perfect example of the direction the city is moving in. This transformation has attracted national attention on a level far greater than could be expected for a small city in Wisconsin. Publications in major cities have reported on the situation in Eau Claire, and nearly all this news has been positive. Eau Claire has consistently found a spot on the ranking lists of "Best places to live in the US" and "Best small places for business careers" (36). These publications see something special, something they want to see. If Eau Claire continues down this path, it is not too unreasonable to see it become an example that communities across the country try to emulate.

However, Eau Claire's future was not always so bright. In 1992, the massive tire factory at Banbury Place closed, leaving thousands without work and an abandoned factory left to rot in plain sight. This factory had once been Eau Claire's economy and the town seemed doomed to fall into crisis. Unfortunately, this tale of deindustrialization has been a common story in America over the last 40 years. Hundreds, if not thousands of communities have lost most of their well-paying working-class jobs in one move, dooming these people to seemingly eternal poverty and despair. These are the communities abandoned by the global economy without a second thought. It seemed this would be the fate of Eau Claire as well.

As time passed, local investors bought the abandoned shell that was the factory and set about converting it into a mixed-use space. It struggled early on, but once the forces discussed in the previous section began to take hold, the establishment began to prosper. These days, Banbury Place ([www.banbury.com](http://www.banbury.com)) houses every sort of human activity imaginable. Within its walls are apartments, office spaces, shops, gyms, light industry, storage, restaurants, day cares and more, with plenty of room to spare (37). It seems safe to assume that Banbury Place is playing just as much a part in the local economy now as it did during its factory days, and that is truly a miracle for the city. Banbury Place is a rare success story in the news genre of industrial decline, and like all the other good things happening in Eau Claire, we can only hope that other communities will try to learn from us so that our entire country can thrive for years to come.

## Tuesday Evening Featured Speaker

### “Cheesemakers, Hodags, and Indians: Rural Identities, Local Distinctiveness, and Controversy in the use of Secondary School Team Names”

*Ezra Zeitler, Associate Professor of Geography, University of Wisconsin-Eau Claire*



Associating a nickname and mascot with an athletic team, such as the Minnesota Vikings and Green Bay Packers of the National Football League, is a distinct tradition in the U.S. These are used at all levels of amateur and professional sport. Their use in private and public secondary schools plays a central role in galvanizing communities through a collective sense of pride and place attachment. This presentation discusses the various types of team names and mascots used in secondary schools, with an emphasis on geographically distinctive names such as Cheesemakers, controversial names, including Indians and Rebels, and how imagery associated with these team names is displayed in schools. To identify the number and geographic patterns associated with these

monikers, team names were collected and analyzed from the Clell Wade Coaches Directory, a compilation of general school information for every secondary school in the country. A fieldwork component documented the cultural landscapes of many communities and the manner in which team name and mascot imagery was displayed on school grounds.

Three major themes that emerged from an analysis of the nearly 21,000 team names in the directory were 1.) a tendency to adhere to a short, conventional, and commonly used list of team names such as Eagles, Tigers, Panthers, and Bulldogs; 2.) aggressive fauna, from Alligators to Yellowjackets, and humans associated with war and lawlessness, including Knights, Pirates, Indians, and Rebels are common; and 3.) a limited but noteworthy collection of team names that highlight local distinctiveness and the desire of a school to be recognized for an aspect of local physical or cultural geography. These team names, such as the mythical Hodags of Rhineland, Wisconsin, evoke a strong sense of place and pride among community members and can become synonymous with the community by outsiders. Local pride elsewhere is reflected in the use of demonyms, biogeography, and natural phenomena, including the Zee-Bees of Zion-Benton Township, Illinois, the Key West, Florida Conchs, and Sishmaref, Alaska Northern Lights, respectively.

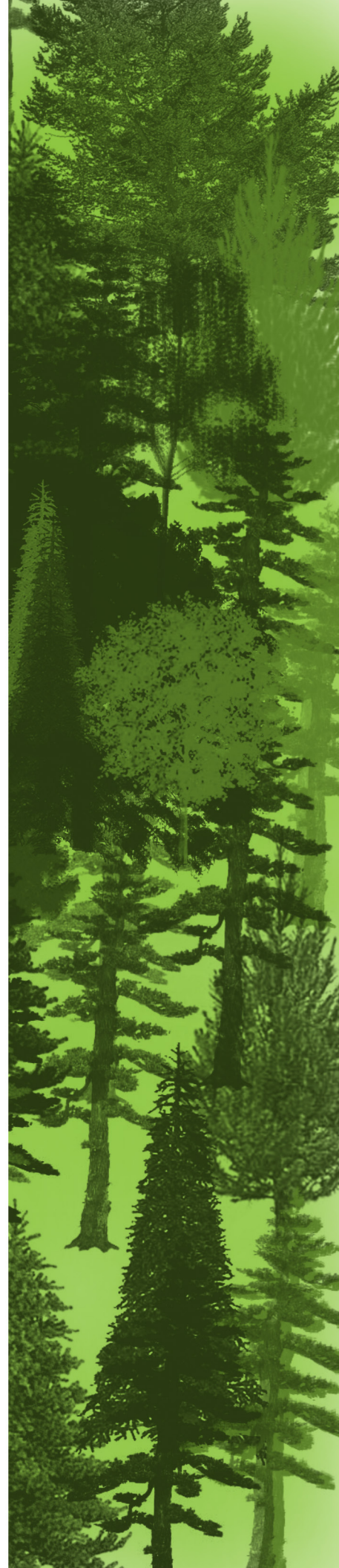
As trivial as these team names may sound, they have become iconic in the communities that they represent and can be difficult to alter if contested. The presentation will conclude with a case study of place identity and the use of Indigenous team names in western Wisconsin secondary schools.

# References

- (1) Federal Highway Administration. (2019.) "Dwight D. Eisenhower National System of Interstate and Defense Highways." Retrieved from <https://www.fhwa.dot.gov/programadmin/interstate.cfm>
- (2) Metropolitan Council. (n.d.) "Metropolitan Council." Retrieved from <https://metro council.org/>
- (3) Dakota County, Minnesota. (n.d.) "Home." Retrieved from <https://www.co.dakota.mn.us/Pages/default.aspx>
- (4) Eagan, Minnesota. (2019.) "Home." Retrieved from <https://www.cityofeagan.com/>
- (5) Rosemount, Minnesota. (n.d.) "Official Website." Retrieved from <https://www.ci.rosemount.mn.us/>
- (6) Metropolitan Council. (2017.) "Thrive MSP 2040 - Forecasts."
- (7) City of Farmington, Minnesota. Retrieved from <http://ci.farmington.mn.us>
- (8) USGS. (2018.) "Understanding the Mineral Resources of the Midcontinent Rift." Retrieved from <https://www.usgs.gov/news/understanding-mineral-resources-midcontinent-rift>
- (9) Ojakangas, Richard. *Roadside Geology of Minnesota*. Mountain Press: Missoula, MT, 2009. pp.284-287.
- (10) Brown, Ralph. *Historical Geography of the United States*. Harcourt Brace, & Woeld: New York, 1948. pp.330-338.
- (11) Johnson, Hildegard B. *Order Upon the Land; The U.S. Rectangular Land Survey and the Upper Mississippi County*. Oxford University Press: New York, 1976, p.i.
- (12) Deere and Company. (2019.) "The Original Steel Plow." <https://www.deere.com/en/our-company/history/john-deere-plow/>
- (13) Webb, Walter Prescott. *The Great Plains*. Grosset & Dunlap: New York, 1931. pp.280-318.
- (14) Beall, R.T. (1940.) "Rural Electrification." *Yearbook of Agriculture, 1940*. <https://naldc.nal.usda.gov/download/IND43893747/PDF>
- (15) Metropolitan Council. (n.d.) "Land Use." Retrieved from <https://metro council.org/Handbook/Plan-Elements/Land-Use.aspx>
- (16) Metropolitan Council. (2016.) "2015 Metropolitan Agricultural Preserves Program Status Report." Retrieved from <https://metro council.org/Communities/Publications-And-Resources/ANNUAL-REPORTS/2015-Metropolitan-Agricultural-Preserves-Report.aspx/>
- (17) Metropolitan Council. (2014.) "Land Use Policies by Community Designation." Retrieved from [https://metro council.org/Planning/Publications-And-Resources/Thrive-MSP-2040-Plan-\(1\)/7\\_ThriveMSP2040\\_LandUsePoliciesbyCD.aspx](https://metro council.org/Planning/Publications-And-Resources/Thrive-MSP-2040-Plan-(1)/7_ThriveMSP2040_LandUsePoliciesbyCD.aspx)
- (18) Dakota County, Minnesota. (n.d.) "Green Acres." Retrieved from <https://www.co.dakota.mn.us/HomeProperty/TaxPrograms/GreenAcres/Pages/default.aspx>
- (19) Visit Northfield. (n.d.) "Home - Minnesota at its Best!" Retrieved from <http://visitingnorthfield.com/>
- (20) Minnesota Department of Natural Resources. (2019.) "Cannon River State Water Trail." Retrieved from <https://www.dnr.state.mn.us/watertrails/cannon-river/index.html>
- (21) Grocery.com. (2017.) "Malt-O-Meal Company." Retrieved from <https://www.grocery.com/malt-o-meal-company>
- (22) Syngenta. (2019.) "Syngenta." Retrieved from <https://www.syngenta.com/>
- (23) Vermillion River Watershed Joint Powers Association. (2019.) "Home." Retrieved from <http://www.vermillionriverwatershed.org/>
- (24) Coleman, K.B. (2002.) "Barns: Types, Subtypes, and Addition Types." Retrieved from <http://www.horizonview.net/~ihs/Barns/Barns-Types.html>
- (25) Flint Hills Resources. (2019.) "Flint Hills Pine Bend Oil Refinery." Retrieved from <https://pinebendrefinery.com/>
- (26) City of Hastings, MN. (2019.) "Home." Retrieved from <https://www.hastingsmn.gov/>
- (27) Washington County, MN. (n.d.) "Official Website." <https://www.co.washington.mn.us/>
- (28) Federal Highway Administration. (2019.) "Dwight D. Eisenhower National System of Interstate and Defense Highways." Retrieved from <https://www.fhwa.dot.gov/programadmin/interstate.cfm>
- (29) National Park Service. (n.d.) "Saint Croix National Scenic Riverway." Retrieved from <https://www.nps.gov/sacn/index.htm>
- (30) "National Wild and Scenic Rivers System." (n.d.) Retrieved from <https://www.sccwi.gov/>
- (31) St. Croix County, Wisconsin. (n.d.) "Home." Retrieved from <https://www.sccwi.gov/>
- (32) City of Eau Claire, Wisconsin. (n.d.) "Home." Retrieved from <https://www.eauclairewi.gov>
- (33) University of Wisconsin-Eau Claire and the Board of Regents of the University of Wisconsin System. (2019.) "UW-Eau Claire." Retrieved from <https://www.uwec.edu/>
- (34) "The Local Store - Eau Claire WI." *Volume One Magazine - Eau Claire Culture and Entertainment*. Accessed April 09, 2019. <https://volumeone.org/sites/storegallery>
- (35) Pablo Center. "Pablo Center for the Arts | Event | Randy Bachman." [Pablocenter.org](https://www.pablocenter.org/all-events/76/andy-bachman/). Accessed April 09, 2019. <https://www.pablocenter.org/all-events/76/andy-bachman/>.
- (36) Meyer, Nick. "Eau Claire Is Making National Headlines. Here's Why You Should Care." *Volume One Magazine - Eau Claire Culture and Entertainment*. Accessed April 09, 2019. [http://volumeone.org/articles/2017/07/24/19899\\_eau\\_claire\\_is\\_making\\_national\\_headlines\\_heres\\_why\\_you\\_should\\_care](http://volumeone.org/articles/2017/07/24/19899_eau_claire_is_making_national_headlines_heres_why_you_should_care).
- (37) "Welcome to Historic Banbury Place | Rental Properties." Banbury Place. Accessed April 09, 2019. <http://www.banbury.com/>.

# Chapter 2

## Western Wisconsin



## Daily Itinerary: Wednesday, 24 July

7:45 am - Walk from hotel to Farmers Market

8:00 am - 8:45 am - Tour of Farmers Market

8:50 am - Depart Farmers Market for Durand Smokehouse

9:30 am - 10:20 am - Durand Smokehouse

11:00 am - 12:20 pm - Corps of Engineers Lock and Dam No. 4

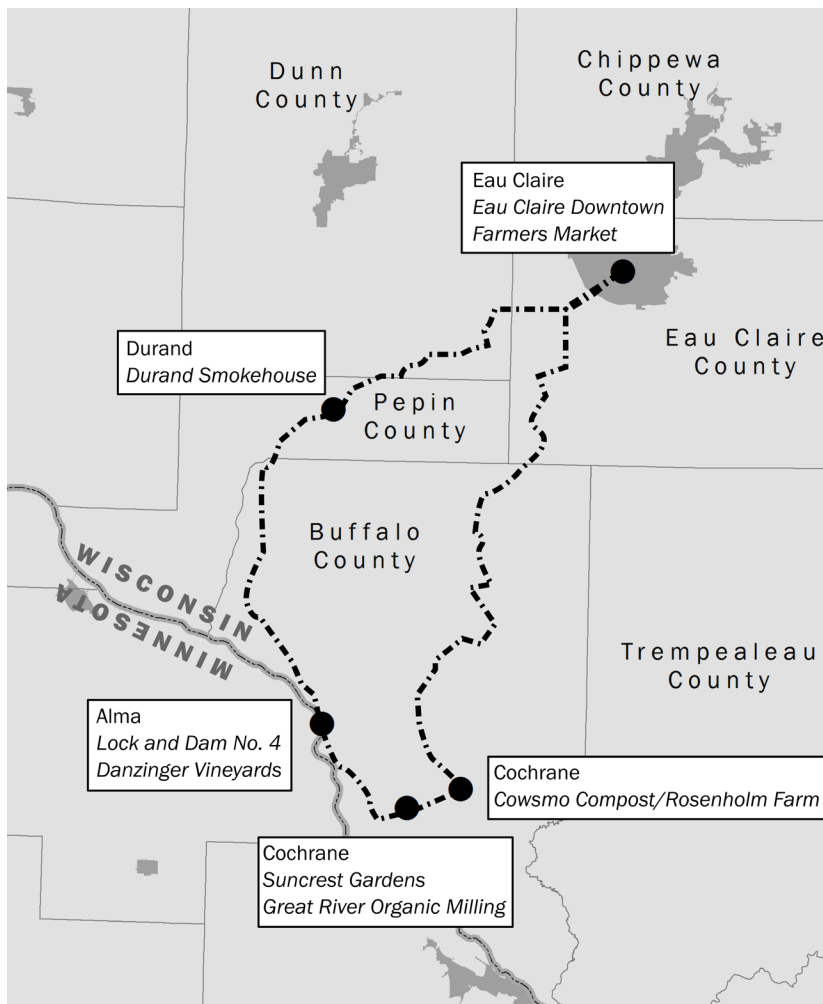
12:30 pm - 1:30 pm - Danzinger Vineyards

2:00 pm - 3:30 pm - Suncrest Gardens and Great River Organic Milling

3:45 pm - 4:45 pm - Cowsmo Compost and Dairy Farm (Rosenholm Farm)

5:00 pm - Depart Rosenholm Farm for Eau Claire

6:00 pm - Arrive at Lismore Hotel



This day's route will take us through the fringes of the Driftless Area, through an agricultural landscape that is quite different from Dakota County. The population of this area have responded to national changes in the agricultural economy in a variety of ways. Our observations and commentary will focus on the creativity of the population and likely futures of the region. Members of a geography honors seminar at UWEC authored the majority of this section of the Field Guide.



## Eau Claire County

Bobby Valiska, UWEC student

Eau Claire was originally called the Town of Clearwater and became part of Chippewa County in 1855. On March 31, 1856, the name was changed to the Town of Eau Claire. After the Civil War (1861-1865), the lumber industry in Wisconsin grew very quickly, and Eau Claire earned the nickname “Sawdust City” for its large number of sawmills. But in the beginning of the twentieth century, the lumber industry collapsed, resulting in Eau Claire resorting to education and tires to fuel the local economy. In 1916, the University of Wisconsin-Eau Claire was established in order to boost the local education sector of the economy.

Eau Claire County has a total area of 645 square miles (1,670 km<sup>2</sup>), 7.3 square miles (19 km<sup>2</sup>) (1.1%) of which is water. In 1860, the total population of Eau Claire County was 3,162 people. Since then, this county has skyrocketed in total population to 102,388 as of 2017. The racial makeup of the county as of 2010 is 93.1% White, 0.9% Black or African American, 0.5% American Indian or Alaska Native, and 3.3% Asian. The majority of immigrants that came to Eau Claire County were of German and Norwegian ancestry. Since then, people with Irish ancestry have also come to Eau Claire County.

## Chippewa County

Bobby Valiska, UWEC student

Chippewa County was established in 1845 by an approved act of the Legislature of the Territory of Wisconsin, dividing Crawford County from Chippewa County. The business center of the County is situated in the valley of Duncan Creek, a stream which supplies valuable water power. Chippewa County is home to the Jacob Leinenkugel Brewing Company (established in 1867), which was a ground point for all brewing in Wisconsin.

Chippewa County has a total area of 1,041 square miles (2,700 km<sup>2</sup>), 33 square miles (85 km<sup>2</sup>) (3.2%) of which is water. In 1850, the population consisted of 615 people. Since then, the population grew immensely to reach a population of 63,445 people in 2017. The racial makeup as of 2010 of Chippewa County consists of 95.0% White, 1.7% African American, 0.5% American Indian or Alaska Native, and 1.2% Asian. The majority of the immigrants that settled in Chippewa County were of German and Norwegian ancestry. Today, not only do German and Norwegian descendants persist, but 10.4% of descendants come from Irish heritage, amongst others.

## Eating Local in Eau Claire

Eryn Mares, UWEC student

Localism is all the rage, and localism in the culinary world is becoming especially popular. Restaurants, grocery stores, and other food suppliers have begun to implement a selection of local produce and products and market this to those desiring to eat locally and sustainably. For conscientious consumers who aspire to eat locally, Eau Claire has many feasible options, including farmer’s



Figure 2.1: Location of Eau Claire County.



Figure 2.2: Location of Chippewa County.

markets, CSA programs, and restaurants that use food grown locally in their meals. These programs and establishments provide access to locally grown produce all throughout the year which localizes the economy, supports several community members financially, and creates connections within the community. Many residents in Eau Claire and the surrounding areas utilize these programs as a staple source of food.

## Farmers Markets Serving Eau Claire

Local farmers have been bringing produce to the city for more than one hundred years, which laid the foundation for farmer’s markets to be implemented. In 1980, an Eau Claire Farmers Market Association was formed (1). From this, several farmers markets in the Eau Claire area have been established and are utilized by people throughout the city and surrounding

areas. Within Eau Claire County, there are six markets that are recognized by the Wisconsin Farmers Market Association (2). The Eau Claire Downtown Farmers Market is one of the most prominent and frequently visited ones.

When the Eau Claire Downtown Farmers Market opened in 1994, there were twenty-five vendors. Currently, there are over seventy registered vendors (1). Many vendors are local businesses and Hmong families. These vendors offer a vast variety of goods. The traditional fruits, vegetables, flowers, and eggs can be found, but as the market has grown, value added products are becoming more and more common, as well. Items such as cheeses, honey, and baked goods can be purchased. Of the fifty-eight vendors listed on the Eau Claire Downtown Farmers Market website, twenty-five are Hmong families (1). In the later part of the 1990s, there was a migration movement of Hmong to the U.S., and Wisconsin has the third highest Hmong population of all fifty states (3). Eau Claire County has one of the highest Hmong populations amongst counties in Wisconsin (Figure 2.4). When moving, Hmong people brought with them many valuable gardening skills which greatly contributes to the vibrance and diversity of the farmers market. Many of these families travel to several different farmers markets to sell produce as it greatly supplements family income.

The Eau Claire Downtown Farmers Market is open all year and characterized by three seasons: spring, summer, and winter season. It is open Saturdays in May; Wednesdays, Thursdays, and Saturdays June through October; and one day a month in November through April (1). A voluntary Eau Claire Public Market Feasibility Study conducted in 2016 asked “What are the main reasons that you have not visited the Eau Claire Downtown Farmers Market recently?” to which the two top answers were “difficult parking” or “too crowded” (4). This survey alludes to just how popular the market is and how much of the community utilizes it. Based on a study conducted by students at UWEC, an average of 4,500 adults visit the farmers market each Saturday during the summer season (5). On certain Saturdays, there have been nearly 6,000 visitors, including children. At the busiest times, around 400 people are in the market pavilion at once, as seen in Figure 2.5 (5).

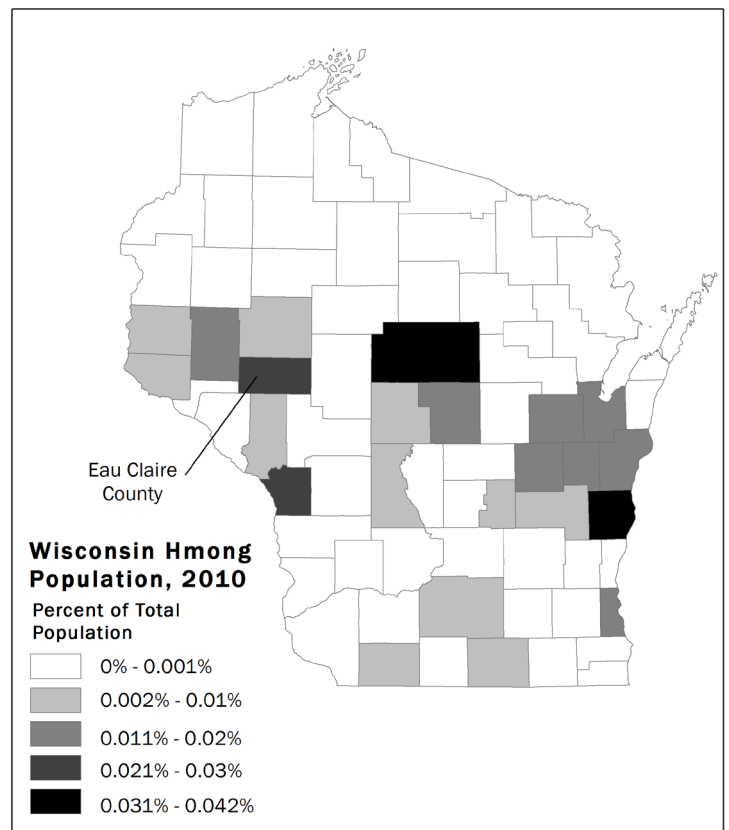


Figure 2.4: Hmong Population in Wisconsin. (source: U.S. Census Bureau)

In 2004, FoodShare discontinued the food stamp system and started using electronic benefit transfer cards to administer food assistance benefits. This prevented FoodShare recipients from shopping at farmers markets because market vendors only make cash transactions. SNAP participants, who previously were able to use their food stamps at the market, suddenly could no longer shop there with their food assistance benefit. The Eau Claire Downtown Farmers Market believes that everyone deserves access to fresh, healthy food and advocates this through Market Match and The Token Program. The Token Program was established in 2012. Upon entering the pavilion, guests can swipe a credit card, debit card, or SNAP card and have it exchanged for tokens equal to the amount of which they paid. Tokens are then treated as equivalent to cash. The Market Match program was established in 2015 which aims to match the dollar amount for FoodShare recipients. Those who use FoodShare have their money doubled by using their SNAP card. SNAP cards can be swiped and exchanged for tokens to be used to purchase goods at the farmers market. Market Match provides a one-to-one match to farmers market guests who use their FoodShare benefits at the farmers market, up to \$10 per week (6). That means, when a farmers market patron spends \$10 of their FoodShare benefit at the farmers market, they receive an extra \$10, in the form of wooden tokens, to spend on fresh, local food at the market. Figure 2.6 provides the dollar value of tokens sold in 2012-2016 and shows the increase of tokens sold after the Market Match was implemented. One individual who utilizes this program states: “This is really amazing. I will finally have access to a lot of produce and other foods that were previously unaffordable to me. I’m very grateful” (6).

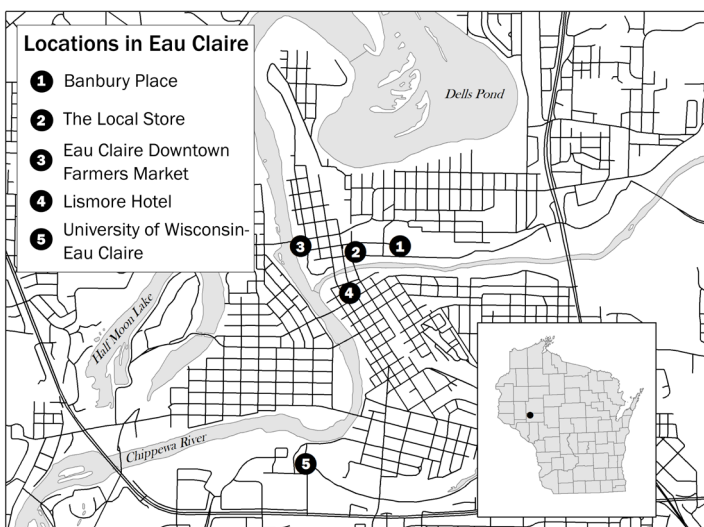


Figure 2.3: Farmers Market in Relation to Other Eau Claire Locations.

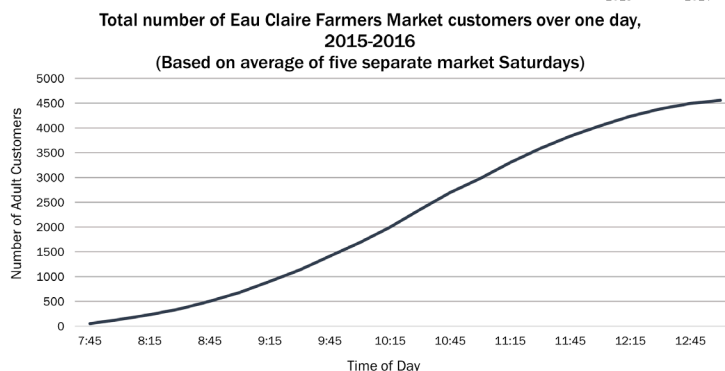
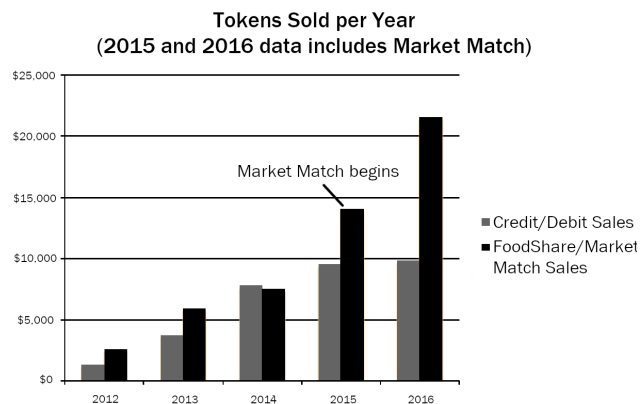
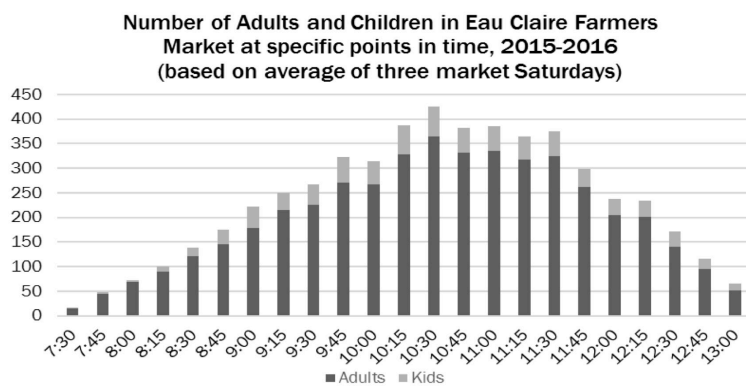


Figure 2.5: Eau Claire Farmers Market Statistics.

## FIELD VISIT

### Eau Claire Downtown Farmers Market

8:00 am - 8:45 am

<https://www.ecdowntownfarmersmarket.com/>

*Eryn Mares, UWEC student*

Philip Arthur Chute started the Eau Claire Downtown Farmers Market in 1994, and it has undergone renovations and continued to grow ever since. Since the beginning, Chute dreamed about and persisted in securing a covered location for the endeavor. In 2006, his persistence paid off. Since then, the Eau Claire Downtown Farmers Market operates under a covered pavilion in Phoenix Park, which is located on the corner of Riverfront Terrace and Madison Street. This is a great attribute as the farmers market can be held both rain and shine. This pavilion is situated near the Chippewa River, which provides a unique aesthetic for visitors.

## Community Sponsored Agriculture (CSA) in Eau Claire

CSA programs have been in existence for about 25 years and have grown in popularity as the push to eat locally, organically, and sustainably has increased. CSAs are programs in which a farm operation is supported by shareholders who share the benefits and risks of food production. Farmers determine the amount of food they expect to grow and determine a number of shares available. Individuals who would like to participate then purchase a crop share, or subscription, before the growing

season begins. The fees of their subscription are exchanged for a box of seasonal produce throughout the growing season. Throughout the season, members pick up their prepaid shares at designated locations, typically on a weekly basis. These shares consist of whatever produce grown on the farm that is in season. CSAs don't restrict their offerings to only produce; some farmers include the option for shareholders to receive eggs, cheese, flowers, or other farm products along with their veggies. Some farmers have begun working together to provide a larger selection for members and bring their goods to the same drop-off areas. Some CSAs also offer an option for people to help with work on the farm in exchange for their produce rather than paying a fee.

Both farmers and consumers benefit from CSAs as it utilizes a localized economy flow. Farmers benefit as the entire system is based on the fundamental concept that there is a shared risk. If the season is poor due to external circumstances, the farmer is not faced with a large profit loss as members paying their dues at the beginning of the season minimizes profit loss for the growers. This also allows farmers to work on marketing during the off season so they can focus on their crop during their busy months. Additionally, the middle man is eliminated so growers can earn more profit from their produce. Consumers benefit as most CSAs are organic and don't use pesticides. They get to see where their food is grown, and it truly is a farm to table system. When buying produce from a grocery store, it is often picked while green and ripens in transit to the store. With CSAs, consumers can be ensured that their produce is ripened on the vine and is fresh. CSAs are also an environmentally friendly alternative to grocery store produce. Because they are localized, there are less carbon dioxide emissions as less energy is required to transport the goods. Additionally, because most CSAs are organic, they don't use pesticides, which can have harmful environmental consequences and

pollute water systems. Those who use CSAs support a regional food system, enhance the agricultural economy of their region, and create a sense of community by getting to know those who produce their food. Each year, the number of CSA farms and participating members increases. There are currently ten CSAs that have drop off sites in Eau Claire (7).

## Driftless Area

This portion of our journey takes us into the “Driftless Area.” The Driftless Area covers about 15,000 square miles, most of which is in Wisconsin and, to some extent, in northwestern Illinois, Iowa, and southeastern Minnesota. “Glacial drift” is a term used to describe the erosional deposits that are left behind from all the weathering and transportation processes of glaciation. The word “Driftless,” as the name suggests, means to be without these glacial deposits. Many regions of the world are “Driftless” because a glacier did not recently cover them; so what makes this area unique?

Vast continental glaciers in a series of glacial periods once covered much of Minnesota and the upper Midwest. In the last glacial period, the Driftless Area was left untouched while continental ice shelves surrounded it on all sides. There are a series of factors that lead to this feature. As the Labrador ice sheets to the north moved south, they were deflected by the highlands between what is now Lake Superior and the northern fringe of the Driftless Area. These highlands are what remains of the region’s mountainous past. Geological evidence indicates that about six million years ago, the area had mountains comparable to today’s European Alps. Two other lobes threatened to cover the Driftless Area from the eastern and the western sides. Both were moving faster than the northern ice sheets. An eastern lobe, the Labrador, followed what is now Lake Michigan and the Keewatin lobe that advanced along a path that is now marked by what are now valleys of the Red River and the Minnesota River. By the time these two lobes met about 50 miles from the southern Wisconsin line, the change in climate caused them to recede before they encroached on the Driftless Area. The Driftless Area has a very well drained geomorphology, unlike its surrounding and western fringes.



Figure 2.6: Driftless Area Geomorphology in Southeastern Minnesota. (source: National Atlas Mapmaker)

## Pepin County

Bobby Valiska, UWEC student

Pepin County was combined with Dunn County until 1856, when it became its own county. Pepin County is named after Lake Pepin, which is an enlargement of the Mississippi River. Lake Pepin is one of the oldest names on the map of Wisconsin, named after the French King Pepin le Bref in 1679.

Pepin County has a total area of 249 square miles (640 km<sup>2</sup>), 17 square miles (44 km<sup>2</sup>) (6.7%) of which is water. It is also the smallest county in Wisconsin by land area. The total population in 1860 was 2,392. As of 2017, there was a total population of 7,282. This small difference in population over 157 years is the smallest increase among counties in Wisconsin. The racial makeup of Pepin County is 98.2% White, 0.3% Black or African American, 0.3% American Indian or Alaska Native, and 0.2% Asian. As of 2008-2012, the majority of people had German, Norwegian, and Irish ancestry, but as of 2013-2017, the majority of ancestries reported were German, Norwegian, and American.



Figure 2.7: Location of Pepin County.

## Local Butcher Shops: Constants in an Ever-Changing Food Market

Riley Larson, UWEC student

The food industry in the U.S. has gone through very significant changes in the last few generations. In fact, Americans consumed 51.6 more pounds of red meat and poultry per capita in 2018 than they did in 1960 (8). It is predicted by the USDA that this amount will rise another 1.7 pounds by the end of 2019 (8). This steady rise in meat consumption is directly correlated with the rise of supermarkets. Since 1960, Americans have been buying more and more food from supermarkets each year (9). Despite the recent dominance of supermarkets, some local businesses have survived and even thrived. Local butcher shops have remained relevant due to a few geographical and individual characteristics of their businesses: their site, situation, locale, and terroir.

As seen in Figure 2.8, there are a large number of small-town butcher shops in west-central Wisconsin. This geographical region has much to do with the success of the meat processing business. When referring to the geographic location, it is important to take into account the different aspects of the place. The situation, or location relative to other places, is crucial when examining rural businesses. Based on Figure 2.8, most of these butcher shops are not located in large cities. There are a few that are set up right in Eau Claire, but the majority of the region's butcher shops are spread out and placed several miles away from smaller towns. This situation allows for the shops to interact with and become ingrained within the communities that surround them. A social embeddedness like this gives a comparative advantage for local butchers (10). They have superior customer service to the large-scale corporations. The site, or physical attributes of a place, also plays a role in the effectiveness of a rural business. The butcher shops in the region surrounding Eau Claire are located in an agricultural part of the state. This is also shown in Figure 2.8, which shows the percentage of the population employed in the agriculture, forestry, fishing, and hunting industries.

While Eau Claire County's labor force is not heavily employed in the agricultural industry, those in the surrounding counties are. Comparing the labor force map and the butcher shops map shows that most of the butcher shops are located in these surrounding agricultural regions. This neighboring area being agriculturally proficient is important because it allows butcher shops to source their meat from local farms. Local meat is becoming more and more of a priority for consumers. They want to know where their food comes from, and small-town butcher shops can give them that information (11). The peace of mind that consumers have knowing where their meat comes from gives the food a sense of place and terroir. Terroir refers to the contribution of a location's distinctive physical features to the way food tastes. This sense of place and terroir often induces "local patriotism" which leads to an inclination towards investing in local business (11). The stronger this local patriotism grows to be, the more butcher shops and small-scale food businesses can compete with large-scale supermarkets.

## FIELD VISIT

### Durand Smokehouse

9:30 am - 10:20 am

<https://thedurandsmokehouse.com/>

*Riley Larson, UWEC student*

In the tiny town of Durand, Wisconsin, there resides an award-winning butcher shop, the Durand Smokehouse. This business is one that prides itself on its quality service and selection. It provides a place where people can order custom cuts, buy a wide variety of freshly processed meats, and bring their own wild game in to be processed all at a reasonable price (12). In this way, the Durand Smokehouse has carried on the traditional traits of small-town butchers. At this place they care about the customer and deal with them on a face to face level. They give the customer a name and face to go with the product. These personal touches within the business help the Durand Smokehouse develop connections with its customers. It is a prime example of the hardiness of butchers and other small-scale food businesses during a time of great competition from supermarkets. This smokehouse is not the only one to continue to thrive in the modern food market. In fact, the Durand Smokehouse is one of a great many local butcher shops in the geographical area surrounding the City of Eau Claire, Wisconsin.

## Buffalo County

*Bobby Valiska, UWEC student*

Buffalo County was established in 1853, and its name comes from the Buffalo River that flows from Strum to Alma, then empties into the Mississippi River. The first grain was grown in the county

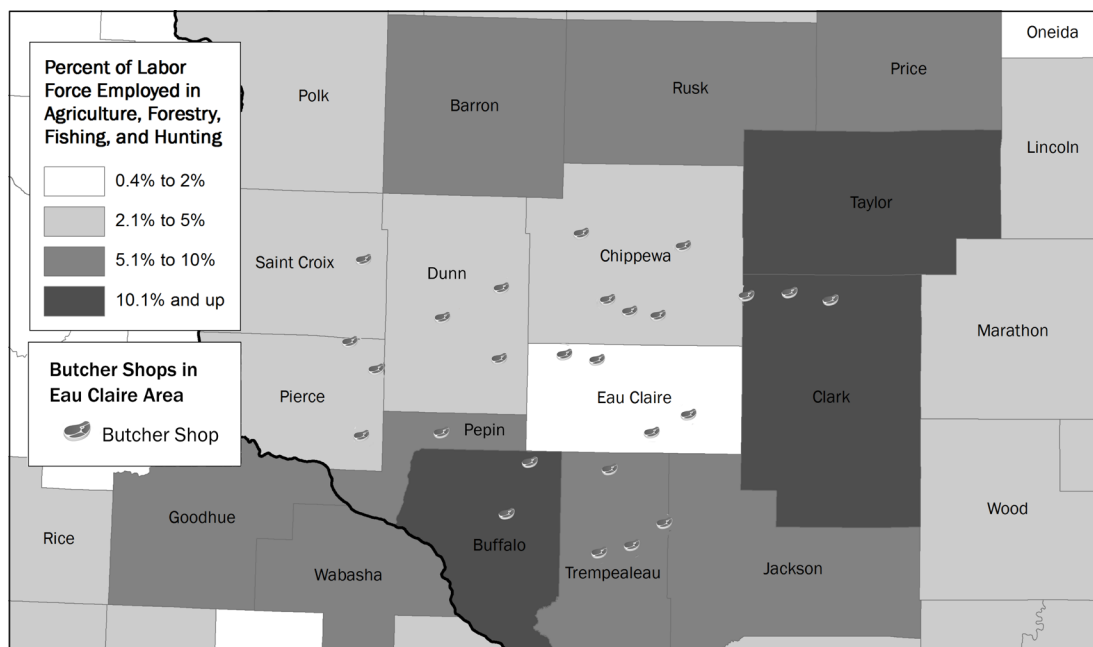


Figure 2.8: Agricultural Employment by County and Location of Butcher Shops near Eau Claire.

around 1852, in what would later become an extensive wheat producing area. During the years 1860 to 1870, wheat acreage soared from 5,608 to 41,703 acres. At the height of the wheat-growing era, there were 64,290 acres grown in the county. Due to poor soil fertility, farmers decided to move westwards instead of trying to follow crop rotations and fertilization. Farms started to move to milk and cheese production in the 1880s. Today, agriculture is still the number one source of income in the county.

Buffalo County has a total area of 710 square miles (1,800 km<sup>2</sup>), 38 square miles (98 km<sup>2</sup>) (5.3%) of which is covered by water. In 1860, the total population was 3,864. From 2010 to 2017, Buffalo County had a slight decrease in population from 13,744 to 13,243, which also accounts for the slight gradual decrease in employment over the last seven years. The racial makeup of the county as of 2010 is 97.5% White, 0.3% Black or African American, 0.3% American Indian or Alaska Native, and 0.2% Asian. Swiss, German, and Norwegian immigrants primarily settled in Buffalo County. Today, much of the population has German and Norwegian ancestry, but there are more people of Polish ancestry than Swiss.



Figure 2.9: Location of Buffalo County.

## Navigating the Mississippi in Wisconsin: Lock and Dam No. 4

Maddie Loeffler, UWEC student

### The Mississippi River

The Mississippi River is a biologically diverse waterway, home to animals like otters, mussels, and sturgeon. Used for a variety of different functions such as trade and exploration, the Mississippi is one of the most historically significant waterways in the U.S. It stretches 2,350 miles from its source at Lake Itasca in north central Minnesota. At its source, the Mississippi River is as narrow as 20 to 30 feet, though it can get as wide as 11 miles. Additionally, the Mississippi is fed into by the Jefferson and Missouri Rivers, which together make up the fourth

longest river system in the world. The Mississippi Watershed includes 31 states as well as some Canadian provinces, meaning ground and river water from these regions empties into the Gulf of Mexico through the Mississippi River's mouth in Louisiana. The area of the watershed is 1.2 million square miles.

Historically, several Native American tribes lived along the banks of the Mississippi because of its fertile river valley and transportation advantages. Later, it was used by European explorers to navigate the North Central U.S. The river is now used by humans primarily for trade and commerce. Goods such as grains, petroleum products, iron, wood, and coffee are shipped up or down the river. Interestingly, barge transportation uses the least amount of fossil fuels per capita of all the common methods of transporting goods. It is also economically savvy, saving farmers and consumers money. The Mississippi River is also an important water source for communities surrounding it. According to the Environmental Protection Agency, more than 50 cities depend on the Mississippi for daily water supply.

Wildlife is abundant in the Mississippi River region. The river is the migratory flyway for 33% (326 species) of all migrating birds and home to 25% (260 species) of all fish species in the continent (13). It contains a large variety of mussel species, including the invasive zebra mussel. The Upper Mississippi River region houses over 50 species of mammals and 145 species of amphibians and reptiles (14). Agriculture in the Mississippi River basin contributes to ecological changes in the valley and river itself. In fact, the river receives runoff from 41% of the continental U.S. This includes fertilizers, farm sewage, et cetera. These contribute to dead zones, which are areas with oxygen levels too low to sustain life.

### Invasive Species

Due to human interference, foreign species have been introduced to the Mississippi, among other water bodies, and now threaten native wildlife. These species include the Asian carp, a blanket term for several species of carp invaders, including the bighead and grass carp. Asian carp are native to Europe and Asia but were used in the U.S. in the 1970s to control weed and parasite growth in aquatic farms. They eventually made their way to the Mississippi and developed a breeding population, from which growth took off. They are currently found as far north as Minnesota. Asian carp are a problem because they out-compete native species for food and space. They have been known to take up entire streams, pushing out other species entirely. Water quality is also significantly lowered by their presence. Interestingly, they transport populations by jumping over low barriers, such as dams, into new waterways. Flooding, which is becoming more frequent because of climate change, facilitates this migration. Further, human actions spread the Asian carp population. For example, watercraft that are not fully drained using the Mississippi locks may carry stow-aways: young Asian carp as well as eggs. The opening of the locks allows the fish to swim upriver, therefore the U.S. Department of Natural Resources recommends that citizens refrain from using them. The government has put forth efforts to reduce travel of the Asian carp through new barriers and other technologies (14).

In addition to the Asian carp, zebra mussels are also classified as an invasive species present along the Mississippi. Zebra mussels

most likely entered the Great Lakes originally by ship, arriving from Europe in the form of larvae. Due to its ability to latch onto boats, the species has traveled across the U.S. and into over 600 bodies of water, including the Mississippi River. First known to be in the Upper Mississippi in 1991, their population grows exponentially through quick and immense spawning patterns. Most impacts of the species remain undetermined; however, they have negatively affected the population size of native mussel species (15). In a 1997 study, Lock and Dam No. 4 had an average zebra mussel density of 235 mussels-per-m<sup>2</sup>. Other locks and dams along the Mississippi had upwards of 3000 mussels-per-m<sup>2</sup>, some exceeding 6000 mussels-per-m<sup>2</sup> (16).



*Figure 2.10: Invasive Species in the Mississippi River.  
Top: Scientists attempt to catch invasive Asian carp in Illinois.  
Bottom: Zebra mussels covering the wall of a lock in Arkansas.  
(source: U.S. Army Corps of Engineers)*

## The Chippewa Meets the Mississippi

The Chippewa River is highly important to western Wisconsin; it connects the area with the greater Mississippi River, eventually feeding into the Gulf of Mexico. Lake Pepin connects the two rivers at Lock and Dam No. 4. The river channel was created 12,000 years ago when glacial Lake Agassiz drained toward the end of the ice age. The Chippewa flows into the Mississippi and carries a large amount of sediment with it. This sediment soon formed a natural dam across the river channel, Lake Pepin along with it. Lake Pepin is currently 22 miles long and one to two miles across (17).

# FIELD VISIT

## Lock and Dam No. 4

11:00 am - 12:20 am

*Maddie Loeffler, UWEC student*

The Mississippi River's Lock and Dam No. 4 is at the Mississippi River's 752nd mile in Alma, Wisconsin. It is about 15 miles above Lock and Dam No. 5 and 45 miles below Lock and Dam No. 3. It is run by the U.S. Army Corps of Engineers. Their district is headquartered in St. Paul, Minnesota, which maintains 12 locks and dams in addition to No. 4. Lock and Dam No. 4's site was selected in 1932, and it was constructed beginning in May of 1935 using concrete, ultimately spanning 367 feet. Today, Lock and Dam No. 4 employs about 13 people. At least two people are there at a time, 24 hours per day and 7 days per week.

The dam has six roller gates and 22 Tainter gates. A roller gate is a cylindrical mechanism that allows water to flow over or below it. It can be lifted or lowered using a chain system, rolling as it is moved. Tainter gates are floodgates used to control the flow of water through hydraulic structures. They were invented in 1886 by Jeremiah Burnham Tainter, who worked for the Wisconsin-based company Knapp, Stout & Co. In addition, Lock and Dam No. 4's earth embankment is 5400 feet long. The lock itself is 110 feet wide by 600 feet long. It holds thousands of vessels from small boats and canoes to barges; primarily carrying grain, coal, fertilizer, and petroleum products. Annually, lock traffic reaches over 13,000 vessels. Together, the lock and dam form a 44.1-mile pool, Lake Pepin, the largest in the district and only natural lake in the Mississippi River channel.

The lock is the portion of the lock and dam where the barges enter and exit. The purpose of the lock is to allow barges to pass through. Because only one or two barges are allowed inside the lock at a time, other barges must wait in the bank nearby. The lock and dam are controlled in the the U.S. Army Corps control building. This is where the lockmaster and other lock and dam workers raise and lower gates, sound safety signals, and track barge traffic.

Lock and Dam No. 4 has needed various repairs over its lifespan. Its last rehabilitation was between 1988 and 1994. A new central control station, new operating machinery, concrete repairs, permanent wiring, new utilities and lighting, and handicap accessibility on the platform were implemented. These renovations contribute to a modern system and provide accommodations for visitors who require them. The U.S. Army Corps of Engineers says that the renovation added about 50 years of serviceability to the lock and dam.

## The Locks and Dams

In total, there are 29 locks and dams along the upper Mississippi. They are integral to local economies and aid in moving barges along the river to transport about 175 million tons of freight per year. The locks and dams are also used for recreational purposes, such as boating, canoeing, hunting, birdwatching, and fishing (18).

The locks and dams of the Mississippi River are meant to regulate the river's water level and flow for the purpose of transportation. The locks are essentially gates that allow barges to pass through, while the dams control the flow of the river. They create a series of ascending or descending steps meant to push boats either up or downstream. While some think that the dams are meant to control flooding, they do not have the capacity to contain floodwaters. If they attempted to control flood waters, other communities would be flooded instead. Additionally, there is a law called the Anti-Drawdown Law, which prevents pool drainage (with the purpose of making room for floodwater) to protect local wildlife.

The locks and dams are run by the U.S. Army Corps of Engineers. The same commission completed extensive studies in 1930 that led to the authorization of their construction. Most of the dams were built between 1930 and 1940. Interestingly, changes to the Mississippi for the purpose of navigation were authorized as early as the 1830s.



Figure 2.11: Lock and Dam No. 4. Top: View of a roller gate from the top. Middle: Side view of Lock and Dam No. 4. Bottom: Control building for Lock and Dam No. 4. (source: Maddie Loeffler)

## Lock and Dam No. 4 and the Environment

Not only is the physical condition of the lock and dam important, but also the condition of the environment surrounding it. The structure is outside of Lake Pepin, which was formed in geologic time by sediment deposited in the Mississippi River at the mouth of the Chippewa. Pepin is the only natural lake in the main channel of the Mississippi. Also, around the lock and dam are federal lands used for wildlife preserves, including the Upper Mississippi River National Wildlife and Fish Refuge.

The presence of the lock and dam contributes to an ever-changing environmental landscape. One specific action that causes an impact on the natural area is called dredging. This supplements the series of water pools by taking sediment from one area and moving it to another. This is said to be required due to counteractive “shoaling”, which is the rising effect that waves have on sediment levels. Without dredging, the sediment would be too high for barges to pass over. The law always requires a nine-foot deep channel for shipping purposes, thus deviation would violate one of the original laws governing the locks and dams.

## Lake Pepin Commercial Fishing along the Mississippi River

The huge Lake Superior Fishery that was based on Minnesota's north shore overshadowed commercial fishing in Lake Pepin. However, after the decline of lumbering and steam boating, some watermen turned to fishing for mussels and fish. Both activities enjoyed a boom period but have now all but disappeared.

In about 1889, a German button-cutter named J. F. Boepple moved to Rock Island, Illinois, and recognized the potential of the river's large mussel beds. He built a button plant that would cut buttons from the mussel (clam) shells at Muscatine, Iowa, and the mother of pearl button industry of the Mississippi began. Within a decade the huge beds near Muscatine were essentially exhausted and the clammers worked up and downstream seeking fresh supplies. By 1902, clammers were in Minnesota and focused their attention on the productive beds of Lake Pepin. Annual surveys indicated that the clammers were killing off the mussel beds and some sort of restocking program was needed. In the 1920s, artificial propagation was begun and the supply of mussels began to increase. However, changes in the river were detrimental to the mussels. Pollution and sedimentation combined to restrict their life cycles. The pearl button business was declining in most locations in the 1930s and it could not survive the competition of plastics in the post war period.

Commercial fishing underwent a similar boom and bust cycle. Unlike clamming, commercial fishing was based on an imported fish, the European carp. The native fish, buffalofish, catfish, and a variety of suckers received mixed reviews as food. The time when they were introduced into the Mississippi is not known. The first reported catches of carp were in 1883. The fish thrived in the river basin, but once commercial fishermen started catching them, carp found a ready market in the larger cities of the Midwest and east coasts. There were the usual problems of shipping



which were slowly resolved. In 1894, the buffalofish accounted for 43% of all fish caught. The ratio of buffalofish to carp was 12:1. By 1899, the catches were about equal; and, in 1922, fishermen caught three times as many carp as buffalofish. The buffalofish declined as carp expanded. The overfishing of the more valuable buffalofish (three times the price for carp) and changes in the backwaters reduced the numbers of the native fish.

Although they were not eaten in Minnesota, carp and the native rough fish, buffalofish, red horse, and yellow suckers were netted and shipped to Chicago and eastern cities. In 1935, about 200,000 pounds of fish were taken from Lake Pepin.

Commercial fishing gradually waned on the lake and, in the 1960s, only the town of Pepin contained a fish-processing plant. Fishermen spread their nets with a six-inch mesh to catch the jumbo carp. The men would go out in flat-bottomed boats to tend their nets that were anchored near the shore. Spring was the best season because the carp would move into shallow water to eat and spawn. The fishermen pulled their six-inch mesh nets from the lake, bashed the huge fish in the head with a billy club to stun them, and threw them into a wooden box. Nothing could be worse than 60 jumbo carp, each weighing between 10 and 20 pounds, thrashing around in the flat bottom of a johnboat.

The freshwater commercial fishing business was hard hit by the expansion of ocean fishing and freezing technologies. Lower priced ocean fish forced a change in the Mississippi Valley from capturing wild fish to farming. At first, carp were held in artificial ponds to fatten them and await better market conditions.

More recently, the huge explosion in the market for catfish has produced enormous fish farms in the Delta Region, and the old practices of netting fish through the ice or hauling nets in johnboats cannot compete. Like clamming, the commercial fishing industry on Lake Pepin has passed into history.

## Healthcare in Rural Wisconsin

Cassidy Krall, UWEC student

As the majority of Wisconsin's land mass is considered a rural area, many necessities including health care, food accessibility, and basic goods and services can be difficult to come by, and it may take a longer navigation time to reach these goods and services. With the problem of having limited access to healthcare, healthcare providers have to expand their treatment ranges and include more patients to provide services for. Providing healthcare is not limited to when someone may be sick, but it also includes providing preventive care and mental health services.

## Rural Patient Healthcare Access

With so much of Wisconsin and other areas throughout the U.S. being classified as rural, there are many challenges that come with patients trying to find healthcare. One of the main problems includes the fact that about 57 million Americans that live in rural areas. Stanford Medicine data shows that rural areas contain "about 20% of the nation's patients but host only 10% of the nation's clinicians" (19).

With this many people living in rural areas, having enough physicians to tend to everyone's needs can prove to be difficult.

While trying to attend to a patient's needs and current illnesses, physicians working in rural areas also have to deal with the fact that people living in rural areas have a higher chance of obtaining one of many health conditions including "obesity, inactivity, being kept from working/daily activities because of physical or mental health, smoking and drug and alcohol use, and chronic illness" (19). With this many health conditions that are more likely to impact people living in rural areas, people also have to deal with a lower quality of healthcare that they are receiving when compared to people living in urban areas.

Figure 2.12 shows four counties of this area, Buffalo, Trempealeau, Pepin, and Eau Claire, which are considered as mainly being in rural areas. The critical access hospitals, non-critical access hospitals, and rural health centers are displayed on the map through different symbols, as well as where residents can get to the hospitals within a 30-minute car drive. Seeing these different locations throughout these counties is significant when describing the struggles that rural areas face when trying to receive proper medical care.

## Western Wisconsin Hospitals and 30-Minute Access Areas

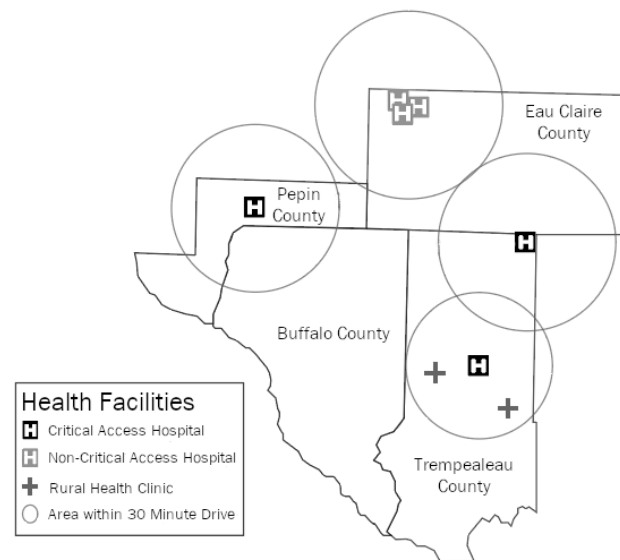


Figure 2.12: Location of Hospitals in Four Western Wisconsin Counties. (source: Google Maps)

## Healthcare Statistics

As previously shown, many of Wisconsin's residents live in or near rural areas. Healthcare in rural areas is lacking for most communities, but just how much some counties are behind others is astounding and can be better demonstrated through statistics. With Eau Claire County being the least rural out of the four counties along this route, its clinical care rating among all the counties of Wisconsin is 16 out of 72. The clinical care ranking includes primary care physician to patient ratio, dentist to patient ratio, and mental health provider to patient ratio. Eau Claire County's patient to primary care physician ratio is 790:1, which has stayed about the same with a little increase

of patients to physician since 2010. The ratio of patients to dentists is 1,000:1, which has also stayed about the same, but with a small decline in the ratio of patients per dentist. Patients to mental health providers for Eau Claire County is 340:1.

Out of the three remaining counties, Pepin County is the worst ranked in clinical care at 59 out of 72 compared to Trempealeau County, ranked at 37 out of 72, and Buffalo County, ranked at 46 out of 72 (20). Pepin County’s patient to primary care physician ratio is 2,440:1, which in the last few years has recovered from a big increase of patients per physician. The number of patients to each dentist has also improved within the last few years now coming in at 1,810:1. Pepin County does not have a record for the ratio of patients to a mental health provider, but the second worst county out of the four is Buffalo County. The patient to mental health provider ratio for Buffalo County is 6,580:1. When looking at Trempealeau County and Buffalo County, the statistics and ratios shown for these two are closer to Pepin County’s ratios since they are more rural counties than Eau Claire County.

### Possible Solutions

To improve healthcare for patients in rural areas, many things need to be changed to create a long-term solution. With many people needing assistance for medical bills, patients are likely to rely on public goods like Medicare and Medicaid. Because of patients having to rely on public goods, “patients are more susceptible to public reimbursement changes” (19). Changing the policies for these public goods can both hurt and help people living in rural areas. Public goods are not enough of a solution to help fix the lack of medical attention in rural areas, but there are other possible solutions.

Some of these alternate solutions are mainly centered around increasing the number of physicians in rural areas. Increasing the number of physicians in rural areas cannot always be simply fixed by hiring more physicians, but the roles of other medical staff can be changed by the state to accommodate more of the rural population. Healthcare organizations can hire non-physician clinicians like physician assistants and nurse practitioners. In an ordinary hospital, these non-physician clinicians do not legally have the authority to perform all medical procedures, treatments, and actions that a physician would have.

By a state taking initiative to increase a clinician’s legal medical actions and abilities, more people in rural areas could receive basic medical attention. If a clinician would be able to

treat patients without having to have a physician with them, they would be able to help a physician by reducing their workload of patients. Figure 2.13 compares a physician assistant to a medical doctor/physician, showing how a physician assistant is dependent on a physician, whereas a physician can be independent along with many other practices that a physician assistant is not allowed to perform.

### Medicare Beneficiary Quality Improvement Project (MBQIP)

While hiring and changing the roles of non-physician clinicians can help with many of the problems rural patients face when trying to receive medical treatments, Wisconsin manages another project to improve the quality of medical care in rural regions of the U.S. This project takes data from critical access hospitals and has the hospitals look over their own data in order to make the appropriate steps to fix the problems they find. This also helps each critical access hospital provide the highest quality of care to every patient, including patients that live in rural areas. This project was so successful in Wisconsin that it became a nationwide project. The Wisconsin Office of Rural Health reports that, nationwide, 96% of critical access hospitals are participating, and all 58 critical access hospitals in Wisconsin are a part of this successful program (21). The key to this program’s success is a critical part of modern society: technology.

### Telehealth

With almost everyone’s lives revolving around technology, it is no surprise that a technology system is helping rural health clinics become better equipped to deliver better care to patients. This technological system is called Telehealth. This system “connects patients to their clinicians, no matter the distance between the two parties” (19). This system can be very helpful for people living in rural areas with “low incomes, no paid time off of their jobs, physical limitations, or acute conditions” (19). By giving patients access to talking with their clinician through technology and without having to deal with the burden of going into a clinician’s office, this project has proven to save a large amount of money that would be spent on travel costs. Telehealth also connects rural hospitals and offices that can help with patient diagnoses and treatments. With any solution to a problem like healthcare, problems are going to arise. Some of these challenges include the cost and the access to good quality Wi-Fi to allow for patients and clinicians to consult with other medical experts. Even with these challenges, telehealth and other solutions will improve the low-quality medical care that patients living in rural areas experience.

	Physician Assistant	Physician
Training	2-3 years graduate education	4 years medical school + residency
Independence	Must work with a physician	Can practice independently
Duties	Diagnosing conditions, writing prescriptions, examining patients, assisting with surgeries	Can additionally perform surgeries and other complicated medical tasks independently
Median wages (in primary care)	\$98,180	\$241,273

Figure 2.13: Comparing Physician Assistant and Physician Careers. (source: Aureus Medical, 2016)

# FIELD VISIT

## Danzinger Vineyards

12:30 pm - 1:30 pm

<http://www.danzingervineyard.com/>

Started in 2003, Danzinger Vineyards is an enterprise of the Danzinger family, as two of them retired from the Danzinger and Sons farm and looked for a new business. They now have an 18-acre vineyard and a tasting room, all next to the Mississippi River. All their wines are made from their own grapes, and they also make fruit wines. In 2013, they were the Wisconsin Grape Growers Association's Winery of the Year (22).

## Rural Innovation in Western Wisconsin: Cardinal Manufacturing

Tristan King, UWEC student

Small town shop classes typically evoke thoughts of building bird houses with bandsaws and sandpaper. Increasingly, these types of classes seem to be disappearing in the U.S.—to the point of developing a skills gap in outgoing students. The Eleva-Strum High School has taken “shop class” to a modern level that surpasses the old model and fills the skills gap, all in a small-town setting. Cardinal Manufacturing is a legitimate company run by students who manufacture goods that are ordered and paid for. The value of a real-world manufacturing environment at the pre-career stage of a high schooler's life is one not often realized, largely due to the rarity of such an education model. Students who take the class in Cardinal Manufacturing gain experience on machinery that is used in actual manufacturing facilities, not just small-scale models or traditional machines. The processes taught are also reflective of those in industry, giving a well-rounded experience that allows students to explore all post-secondary options. Students are not just paid with an education; they receive dividend checks based on the hours that they work, giving them real income.

Students must apply for the class, much like a real job. Experience in prerequisite shop classes, a project portfolio, a resumé, and a letter of recommendation are all requirements of the two-year course. Positions throughout the manufacturing business and process are assigned, including quoting jobs, manufacturing parts, quality assurance, customer service, marketing, and accounting.

The model of Cardinal Manufacturing is unique in that it produces students that are directly sought after by the manufacturing industry, as they leave high school with experiences that almost no other students at that level have. It is also self-sustaining—profits shared with students come only after all expenses are covered, so no additional tax dollars are allocated to the expensive upkeep and expansion of the innovative facilities. This results in a model that other schools seek to adopt, attracting administrations to the area during open houses.



Figure 2.14: A Student Working with Cardinal Manufacturing  
(source: Eleva-Strum School District)

## Trempealeau County

Bobby Valiska, UWEC student

Named after the Trempealeau River, Trempealeau County was created in 1854 and organized in 1855. It is home of the Trempealeau Mountain that French fur traders discovered while traveling by river across the county. This mountain is at the mouth of the Trempealeau River at the confluence with the Mississippi River. The first Trempealeau County Courthouse was built in Galesville and was ready for occupancy in 1856. Galesville lost its status when county residents voted November 7, 1876, to move the county seat to Arcadia. Just one year later, voters moved the county seat to Whitehall. The City of Whitehall has been the Trempealeau County seat since 1883.

Trempealeau County has a total area of 742 square miles (1,920 km<sup>2</sup>), 9.0 miles (23 km<sup>2</sup>) (1.2%) of which is water. The total population in 1860 was 2,560 people. In 2017, the total population reached 29,510 people. The racial makeup of Trempealeau County is 94.5% White, 0.2% Black or African American, 0.2% American Indian or Alaska Native, and 0.4% Asian. The common ancestries in Trempealeau County are German, Norwegian, and Polish.



Figure 2.15: Location of Trempealeau County.

# FIELD VISITS

## Suncrest Gardens

2:00 pm - 3:30 pm

<https://suncrestgardensfarm.com/>

*Eryn Mares, UWEC student*

Suncrest Gardens is a sixteen-acre organic farm located in Cochrane, Wisconsin (23). Established in 2003, it is an organic farm that embraces and practices the sustainability of food production. There are two acres of vegetables and berries and several acres of pasture used to raise grass fed animals. Suncrest Gardens is equipped with a greenhouse to extend the growing season. It is another example of an option for people near the Eau Claire area to eat locally in a restaurant-like setting. It is a unique farm that utilizes its fresh produce to make meals in a restaurant style business. They are mostly known for their diverse array of artesian wood fire pizzas which people travel from afar to eat. They also serve pesto, salsas, salads, gyros, grilled kabobs, and egg rolls that are made from fresh produce that is grown exclusively on the farm, including the meats, veggies, and herbs. Their menu is consistently being updated throughout the year. The types of pizza they offer and the ingredients used within their other dishes vary throughout the season depending on the produce that is in season as the pizzas are made with fresh ingredients. This farm also hosts events called “Dinner on the Farm” in which a dinner is served using exclusively ingredients in season or produce that has been harvested and preserved.

## Great River Organic Milling

<https://www.greatrivermilling.com/>

*Tristan King, UWEC student*

Nestled in the small town of Cochrane, Wisconsin, near the Mississippi River after which it is named, is Great River Organic Milling (GROM), a humble grain mill that has changed the perception of milling. This change, however, is not to a new process—rather, what makes Great River unique is its focus on an old style of milling. Instead of using the modern rolling process that produces the white flour most common in foods today, this mill uses

traditional granite stones to produce specialized flours that include more parts of the grain and are therefore more nutritious and flavorful. In addition to a higher caliber of product based on quality, Great River produces flour under a litany of certifications, including USDA Organic and non-GMO.

Founded in 1975, GROM began as a sort of “custom” grain company, fulfilling specific needs of local stores. Co-ops and grocery stores took advantage of the quality flours, pancake mixes, and cereals offered to them, giving GROM a hold on the local scale. This scale did not grow until 2004, when owner Rick Halverson seized a more national demand, selling to large national retailers. As of now, GROM products can be purchased online directly from their website or on Amazon, either by the bag or in bulk quantities, or from Costco and Festival grocery stores of the Midwest. Small local co-ops and health food stores are still served as they were in the beginning.

Two characteristic symbols of the company are the blue heron seen on their product packaging and logo, and the slogan: “Bake Great!”. The blue heron is an iconic symbol of the region in which GROM is located. These large birds are seen standing or flying along the shores of the Mississippi River, and the bird on their packaging, aptly named BG, likewise “stands tall as a symbolic reminder of the company’s commitment to providing great organic products” (24). “Bake Great!” is not only a catchy reference to their name, but also represents GROM’s commitment to a wholesome, quality product.

Besides just providing a tasty product, GROM is at the forefront of a significant movement in the U.S. to focus on foods that are sourced locally and made with higher standards. 95% of the grains milled at GROM are sourced directly from the Midwest, with the remainder coming from Canada (25). A variety of nutritious products are the emphasis of the company—no products are bleached or bromated. They are made with consideration of the area’s rich natural resources: “the natural beauty of the surrounding area is a constant reminder of the importance of our responsibility to be good land stewards” (25).

## Spanish is Spoken in Arcadia? (¿Se habla español en Arcadia?)

Benjamin Brown, UWEC student

When looking on a map, Arcadia hardly stands out from the thousands of other rural communities that Wisconsin is home to. Located in the southern half of Trempealeau County, it appears to be nothing more than a small town. Under the disguise of this sleepy rural town, however, lies an intricate and diverse community, making Arcadia an exceptional place for a

city its size. The small town is located on the Trempealeau River, near the Buffalo/Trempealeau county border. Arcadia is home to a small community of nearly three thousand residents.

Over the last few decades, rural Wisconsin communities have begun to experience negative changes due to a loss of residents to larger urban areas. Especially prevalent is the loss of students and young adults from these communities, who provide vital financial support and “brain power”. Having fewer students also causes financial difficulties for rural school districts. Upon graduation, these students would

# FIELD VISIT

## Cowsmo Compost/Rosenholm Farm

3:45 pm - 4:45 pm

<https://www.cowsmocompost.com/>

*Tristan King, UWEC student*

Cowsmo Compost employs a more sustainable model of dairy farming: rather than just spreading the “spoils” of the process (manure) onto fields, this dairy farm turns them into a valuable compost. Similar to Great River Organic Milling, what started as a small-scale operation serving local stores has turned into a national and international success, reaching as far as Grenada.

Based on a partnership with their own dairy, Rosenholm Dairy, owners John and Nettie Rosenow began composting in 1989 after a devastating barn fire brought the need to reevaluate their business model. At that point, it was not the focal point, but rather a way to boost profits while creatively managing manure. Compost was sold to small local shops to be used by local gardeners as an organic fertilizer option. Scale of operation increased in 1997 in a merger with a neighboring family to form Rosenholm-Wolfe Dairy, increasing the supply of manure to allow a larger focus on composting with a more refined process. Further expansion occurred from 2001 to 2006 with products being sold at a national level in stores and online. 8000 cubic yards of compost were then being produced and distributed annually. Wolfe has since been bought out of the business, returning the namesake to Rosenholm Dairy. The business of Cowsmo Compost exists under a corporate structure, and holds no assets; the business simply exists for retail purposes so that Rosenholm Dairy is protected from liability.

The significance of what Cowsmo does follows the principles of sourcing organic food and materials locally. This is where Cowsmo’s roots are, and continue to be, with products still being sold locally and across the Midwest at better prices than exist nationally. However, regional buyers have still taken an interest. Organic growers previously had to import their compost products from the northeastern part of the U.S. but are now able to purchase much closer to their farms. Sustainability is also a major component to Cowsmo’s mission, both economically and environmentally. At the surface level, sourcing products locally allows easier shipping, reducing fuel consumption. Environmental impact is reduced when less manure is spread on fields and processed properly to stabilize it—compost doesn’t even smell like manure once aged! In addition to providing an organic way to grow produce for small growers, Cowsmo is able to sustain themselves economically when milk prices alone are unable to do so.

In addition to running two businesses, John Rosenow is active in the world of dairy farming on different levels. He is passionate about understanding the wellbeing of his employees—50% of whom are Latin American. John has started a nonprofit that sponsors farmers to visit the home villages of their employees, allowing them to understand what they leave behind when they come to work in the U.S. Additionally, he is an active advocate for the mental and financial health of dairy farmers in Wisconsin. Hundreds of farms have been shutting down annually across the state for the past five years, putting a huge toll on farming families. John has worked with UWEC to discuss solutions for helping farmers cope with the dire situations that accompany the loss of farms that have been in their families for generations.

ideally enter the community workforce to become productive tax-paying members of society. Young people, however, have continued to leave rural communities in startling numbers.

While many rural areas in Wisconsin are struggling to maintain residents, Arcadia, Wisconsin, is exactly the opposite. Migration is a key factor in the city’s well-being. Spanish-speaking migrants, mainly of Hispanic descent, have benefitted Arcadia by “patching all of the holes” that younger native generations left upon their departure. These Spanish-speaking workers have provided Arcadia with a stronger tax base and have filled vacant job slots. Just as important are the children of migrants, who aid the local Arcadia School District with increased enrollment and subsequent government funding.

## Diversity in Arcadia

Arcadia stands out from the rest of rural southwestern Wisconsin. At present, over one-third of the city is of Hispanic descent (26). In addition to work and school benefits, the Spanish-speaking community has brought a multitude of diversity to Trempealeau

and Buffalo Counties. On arrival to Arcadia, one notices a variety of subtle changes proving that Arcadia has been diversified by the Hispanic population living there. As an example, Arcadia is home to a high number of Mexican restaurants, very dissimilar to other rural regions in Wisconsin. In passing, one might simply notice the diversity of people walking down a street.

The Hispanic presence in the city has encouraged city officials to embrace the Spanish language. Bilingualism has become such an important factor in the city that it is currently required that election ballots be provided in both Spanish and English (26). Also, local masses are offered in both languages.

Unfortunately, current U.S. politics have created a state of misconception and fear that challenges the success of this diverse community. Regarding the ongoing immigration debate, Hispanic people in Arcadia have become increasingly concerned about their welfare and safety (26). As a result of this uneasiness, Hispanic people are tending to spend less money in Arcadia and are sending more back to their home countries in the form of remittance payments.

## Migrant Labor in Arcadia

Spanish-speaking migrant workers have provided Arcadia with a much-needed labor force. These hard-working individuals have prevented the City of Arcadia from population decrease and have put money back into the city by living and purchasing goods and services there. The city has especially benefitted from the influx of young working-aged people (26). Although Spanish-speaking workers are employed in many different businesses across Buffalo and Trempealeau counties (factories, dairy farms, restaurants and more), Arcadia is an important regional center of employment because of its large manufacturing and food plants.

Arcadia's large employers provide the community's means for survival. Without these employers, the city would only be able to offer a fraction of the jobs currently available. Arcadia is home to two of the region's largest factories. The first, Ashley Furniture, is a nationwide producer and distributor of household furniture goods. Ashley's massive factory, comprised of 175 acres, is Arcadia's main employer (27). In addition to providing large numbers of jobs, the Ashley for the Arts foundation (Ashley Furniture's non-profit organization) has played an important role in bringing the community together (28). The organization's annual showcase event brings popular music artists to the area and draws massive crowds. Because of Arcadia's convenient central location, music fans travel to Arcadia from all over Wisconsin and Minnesota, benefitting local tourism. Also of high importance in the city is the Pilgrim's plant, which is a poultry processing plant. Both factories are key employers for the increasing number of workers settling in Buffalo and Trempealeau Counties.

## Rural Town, Robust School District

Rural and town school districts often experience a variety of disadvantages due to limited amounts of students. These rural school districts in Wisconsin are struggling due to a lack of funding directly involved with the number of students that attend each school district (29). In response to this statewide crisis, Wisconsin legislature has implemented Act 141, which aims to allot varying amounts of money to school districts with differing levels of monetary need. Based on a variety of factors, this legislation attempts to calculate the amounts of funding needed to run school districts across the state. A school district's classification (Urban, Suburban, Town, or Rural) and its enrollment numbers play a major role in determining how much capital a school district receives. Most commonly, rural school districts need the most funding in order to function properly. Even though the statewide funding formula generally allows rural and town districts to receive more money, these school districts often continue struggle to make ends meet.

The Arcadia School District is classified by the State of Wisconsin as a "town" school district (29). It is surrounded by six rural school districts. As mentioned above, one of the most degrading losses in rural communities is the loss of students and young people. Arcadia, unlike the remainder of rural Wisconsin, has managed to maintain a flourishing school district. Spanish-speaking families whose parents are employed at the local businesses in Arcadia provide much-needed children to the local school district. Based on the Wisconsin Public School funding formula,

schools with greater numbers of students receive greater amounts of funding. According to enrollment data provided by the Wisconsin Department of Public Instruction, enrollment numbers in Arcadia are steadily continuing to increase as more families are settling in the region. The percentage of Hispanic students in the Arcadia School District has increased from 9.05% during the years 2005-06 to 62.22% in 2017-18 (30). This drastic increase in Spanish-speaking students (Figure 2.16) is what has allowed the Arcadia School District to flourish over the last decade. The influx of Hispanic students has given the school district the freedom to add programs and improve the learning environment for students of all racial backgrounds. Embracing Spanish-speaking students does not come without challenges, however, and the school district has had to make adjustments to tend to the needs of Spanish-speaking students. Even though most of the Hispanic students in the school district are fluent in both Spanish and English, the school district has begun to place large emphasis on hiring teachers who are bilingual. Hispanic students have played a major role in preserving the Arcadia School District from declining enrollment.

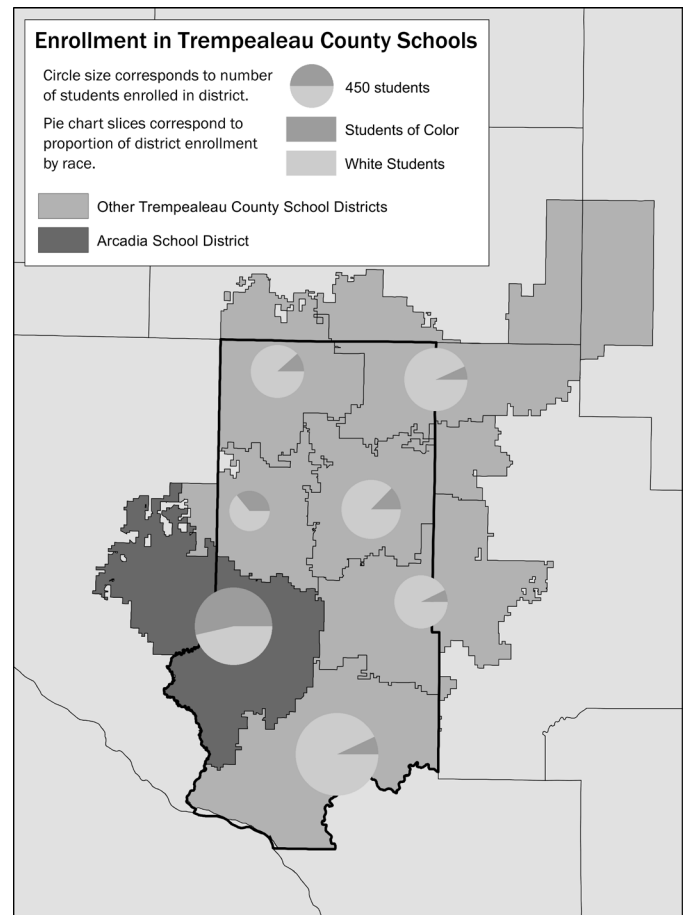


Figure 2.16: Total Enrollment Levels and Enrollment of Students of Color in Trempealeau County School Districts. (source: Wisconsin Department of Public Instruction)

## America's Dairyland

Kailey Persons, UWEC student

Dairy farming has been a major part of the culture in Wisconsin for as long as people can remember. Wisconsin is easily identified as "The Dairy State." But how did Wisconsin get that name? Originally, when settlers moved to Wisconsin, they started wheat farming. Wheat farming was an easy way for them to make

money, and it seemed to have little risk. However, wheat farming started to become more difficult, so they began looking for alternatives. In 1837, Charles Rockwell became one of the first Wisconsinites to start making cheese. After that, dairy farming and cheese making spread across the state rapidly, and in 1899, over 90% of farms had dairy cows (31). Migrants from New York, Scandinavia, and Germany, all had a background in cheese making, so they used their prior knowledge to start making it in Wisconsin. Dairy farming became a major field of study at the University of Wisconsin, which promoted new ideas to improve dairy farming, making it a more popular practice. Access to resources for education and the promotion of dairy farming made Wisconsin the leading dairy state in the nation by 1915 (31). While California has recently been competing with Wisconsin for that title, Wisconsin has held strong as “America’s Dairyland”.

In recent years, other states have been fighting with Wisconsin to produce dairy. Milk prices have been decreasing, hurting farmers in multiple ways. Farmers have been trying to keep up with the modern world, but even if they produce more milk, they may still not be getting the money they need to make a profit. People have begun to view the dairy industry as a failing industry, turning possible farmers away from the industry. With the placement of tariffs on dairy exports, our exports have fallen drastically, as foreign countries turn to Europe to satisfy their needs (32). With a vast number of farms failing and people giving up their dreams of dairy farming, we find an even bigger sense of pride in the farms and cheese factories we have continued to keep alive.

### Eau Galle Cheese Factory

Eau Galle Cheese Factory was founded by Leo Buhlman in 1945. Leo immigrated to the U.S. in 1926 after studying at a cheese apprenticeship in Switzerland for eight years. When Leo first opened the cheese factory, he made and sold Swiss cheese. Buhlman continued to sell Swiss cheese for the following 13 years.

He started branching out in 1958 by making Cheddar cheese, and then a few years after that he started making Italian cheeses. Italian cheeses were very popular and sold out quickly. Leo allowed his son to take over managing as he got older. Eventually, they moved to a new and improved facility in Durand, which is their current location, but they kept the Eau Galle name. The factory is still operated by the Buhlman family, and they take great pride in offering quality Italian cheeses, along with many other classic kinds of cheese such as cheddar or colby. Eau Galle Cheese Factory has won multiple National and World titles for making the best parmesan and asiago cheeses (33). Their story resembles the story of many other families in Wisconsin who make cheese for a living. Dairy exports are the leading export for Wisconsin, making our economy very dependent on our production of cheese. In 2017, Wisconsin exported over \$772 billion in dairy products, its next highest export being soybeans at over \$481 billion (34). Dairy exports make up almost one-fourth of Wisconsin’s exports. Without the dairy industry, Wisconsin’s economy would not be where it is. Wisconsin not only sells to other countries but also to other states. Wisconsin sells \$12.9 billion worth of cheese to other states across the country. Currently, each person in the U.S. consumes about 39 pounds of cheese each year, and one of every four pounds of cheese comes from Wisconsin (34). Wisconsin cheese comes from Wisconsin milk, and 90% of the milk produced in Wisconsin is used to make our great cheeses (35). Wisconsin currently has 126 cheese factories dedicated to making world-class cheese. In the counties surrounding Eau Claire, there are eight factories. The northwestern counties of Wisconsin do not have very many cheese factories in comparison to the rest of the state. This is because there is a higher production of milk in the central, east, and southwest regions in the state, where there are higher amounts of dairy farming, which allows for more production of cheese. A strong correlation exists between the situation of dairy farms and the situation of cheese factories because dairy farms are the resource cheese plants need, and good farmland is the resource dairy farms need.

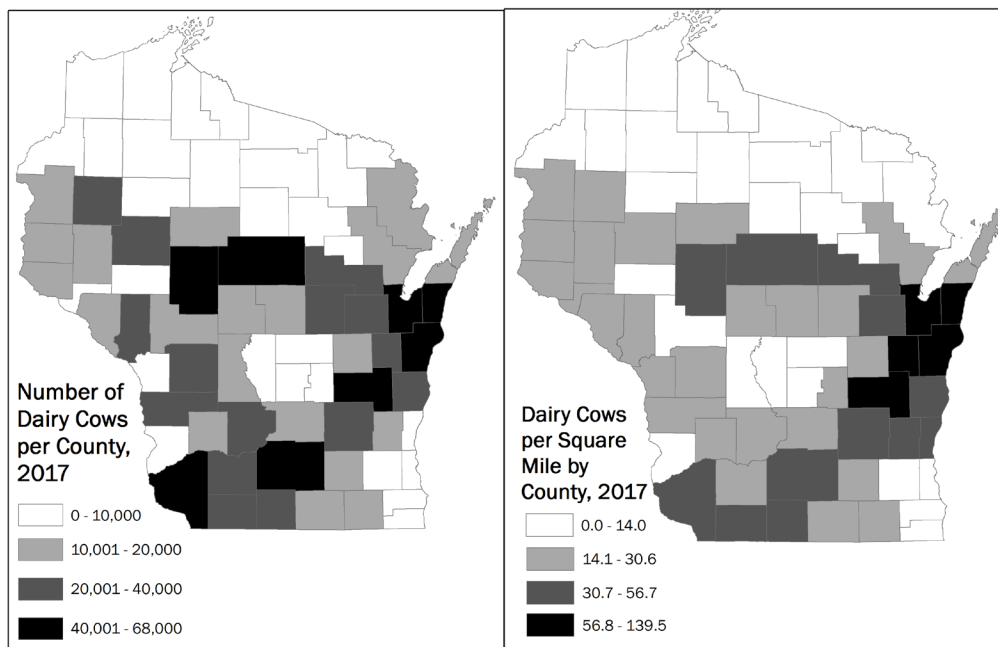


Figure 2.17: Density of Dairy Cows in Wisconsin.  
(source: National Agricultural Statistics Service)

Not only does the Wisconsin economy rely on the production of cheese, but the U.S. as a whole relies on the cheese production here in Wisconsin. If Wisconsin did not produce cheese at all, or if it produced even half of what it currently produces, there would be a shortage of cheese, which would cause prices to rise. Thanks to places like the Eau Galle Cheese Factory, we can sleep easy knowing that we have access to any kind of cheese we want, without the fear of running out.

## Nelson Cheese Factory

Nelson Cheese Factory was founded over 100 years ago in the small town of Nelson, Wisconsin. They no longer make cheese, but they are still a great attraction for cheese lovers from all around the state and the country. They now offer cheeses from Wisconsin as well as from other countries around the world. They have also expanded their menu to include fine wines and gourmet food made fresh each day. Here you can enjoy your choice of ice cream, sandwiches, soups, and salads (36). One reason that can explain why Nelson Cheese Factory doesn't produce its own cheese anymore is because of its location. Nelson Cheese Factory is situated in a region where there are not as many dairy farms compared to other parts of the state. Since there are not as many dairy farms, there is a smaller supply of milk coming in to make cheese, and that forces the cheese factories to compete with each other for the milk. However, Nelson Cheese Factory has been successful in retailing cheese from other factories around the state and around the world, as well as growing their company to include other indulgences, such as wine and ice cream. Nelson Cheese Factory shares a similar story to many other factories in Wisconsin, and its beauty invites people to stay and enjoy what there is to offer. Nelson Cheese Factory

offers cheese from European countries, where cheese making is a whole different game. In the European Union, cheese can only be called by a certain name if it was actually made in the location where it got its name and is made using that technique. For example, cheese can only be called Gruyere cheese if it is made in Switzerland, and Feta cheese can only be called Feta if it is made in Greece. These cheeses are protected by certifications called Protected Designation of Origin or Protected Geographical Indication (37). Europe creates these protections because they are very proud of the cheeses that they create, and they don't want anyone to lay claim to the titles of the cheeses.

The U.S. does not lay such claims on cheeses created in the U.S. For example, Colby cheese, which originated in Colby, Wisconsin, can be made anywhere. It is not limited to production in Colby or in Wisconsin in general. Europe currently has about 224 cheeses that are protected, but they want more protections. The E.U. wants to ban the U.S. from using the names parmesan, asiago, feta, gruyere, gorgonzola, fontina, romano, and others to refer to the cheeses we make here in the U.S. that mimic those from the regions of their namesake. The U.S. claims that consumers think of the name of a certain cheese to just mean what type of cheese it is, not what region it was made from, or what technique is used to make it, so taking back the name would not do anything to benefit the regions fighting to reclaim their names (38). If Europe reclaimed some of their names, the U.S. could face a downturn in cheese sales as they try to rename what they make or try to get by without making those cheeses. If cheeses like romano do get protected by the Protected Designation of Origin or the Protected Geographical Indication, at least we know that we can find the cheeses in Nelson Cheese Factory, as they are proud to provide cheeses from across the world.



# References

- (1) Eau Claire Downtown Farmers Market. 2018. [www.eecdowntownfarmersmarket.com](http://www.eecdowntownfarmersmarket.com) (last accessed 5 April 2019)
- (2) Wisconsin Farmer's Market Association. [www.wifarmersmarkets.org/home.aspx](http://www.wifarmersmarkets.org/home.aspx). (last accessed 7 April 2019).
- (3) Hmong in Wisconsin: A Statistical Overview. May 2015. UW Applied Population Laboratory & University of Wisconsin Extension. [https://counties.extension.wisc.edu/washington/files/2010/07/hmong\\_chartbook\\_2010.pdf](https://counties.extension.wisc.edu/washington/files/2010/07/hmong_chartbook_2010.pdf)
- (4) Eau Claire Public Market Feasibility Study. Market Ventures Inc. May 2016. [www.eauclairewi.gov/home/showdocument?id=14916](http://www.eauclairewi.gov/home/showdocument?id=14916)
- (5) Kaldjian, P. 2016. Veggies in the Valley. Conference Presentation, WLAAG/ELAAG Annual Meeting, Marquette, MI, 14 October.
- (6) Market Match & The Token Program. <https://ecmarketmatch.wordpress.com> (last accessed 5 April 2019)
- (7) CSAs serving Eau Claire, WI. Local Harvest. 2016. [www.localharvest.org/eau-claire-wi/csa](http://www.localharvest.org/eau-claire-wi/csa) (last accessed 5 April 2019)
- (8) National Chicken Council. 2019. Per Capita Consumption of Poultry and Livestock, 1965 to Estimated 2019, in Pounds. The National Chicken Council, USDA, 21 Mar., [www.nationalchickencouncil.org/about-the-industry/statistics/per-capita-consumption-of-poultry-and-livestock-1965-to-estimated-2012-in-pounds/](http://www.nationalchickencouncil.org/about-the-industry/statistics/per-capita-consumption-of-poultry-and-livestock-1965-to-estimated-2012-in-pounds/).
- (9) Cashian, R., et al. 2014. A Gap Analysis Butcher Shops. University of Wisconsin-Whitewater Fiscal and Economic Research Center, 3 June.
- (10) Hinrichs, C. 2000. Embeddedness and Local Food Systems: Notes on Two Types of Direct Agricultural Market. *Journal of Rural Studies*, vol. 16, no. 3, Jul., pp. 295–303., doi:10.1016/s0743-0167(99)00063-7.
- (11) Skallerud, K., and Wien A. 2019. Preference for Local Food as a Matter of Helping Behaviour: Insights from Norway. *Journal of Rural Studies*, vol. 67, Apr., pp. 79–88., doi:10.1016/j.jrurstud.2019.02.020.
- (12) The Durand Smokehouse LLC. (2019.) "About." Retrieved from [thedurandsmokehouse.com/](http://thedurandsmokehouse.com/).
- (13) Mississippi Valley Traveler. (2018.) "Plant and Animal Life Along the Mississippi River." Retrieved from <https://mississippivalleytraveler.com/plant-and-animal-life-mississippi-river/>
- (14) National Parks Service. Mississippi River Facts. <https://www.nps.gov/miss/riverfacts.htm> (Accessed March 25, 2019)
- (15) US Fish and Wildlife Service. The Exotic Zebra Mussel. <https://www.fws.gov/midwest/endangered/clams/zebra.html> (Accessed March 31, 2019)
- (16) Cope, X., M.R. Bartsch, and R.R. Hayden, 1997. Longitudinal Patterns in Abundance of the Zebra Mussel (*Dreissena polymorpha*) in the Upper Mississippi River. *Journal of Freshwater Ecology* 12:2, 235-238.
- (17) Weeks, J. A. Lock & Dam #4. Lock & Dam #4, Alma, WI. [https://www.johnweeks.com/river\\_mississippi/pagesL/missLD04.html](https://www.johnweeks.com/river_mississippi/pagesL/missLD04.html) (Accessed May 6, 2019)
- (18) US Army Corps of Engineers. Lock & Dam 4. <https://www.mvp.usace.army.mil/Missions/Navigation/Locks-Dams/Lock-Dam-4/> (Accessed March 10, 2019)
- (19) Patient Engagement HIT. 2018. Strategies for Rural Patient Healthcare Access Challenges. Patient Engagement HIT. <https://patientengagementhit.com/features/strategies-for-rural-patient-healthcare-access-challenges> (last accessed 6 May 2019)
- (20) Wisconsin Rankings. County Health Rankings & Roadmaps. <http://www.countyhealthrankings.org/app/wisconsin/2019/rankings/buffalo/county/outcomes/overall/snapshot> (last accessed 6 May 2019)
- (21) Medicare Beneficiary Quality Improvement Project (MBQIP). Wisconsin Office of Rural Health. <http://worh.org/mbqip> (last accessed 6 May 2019)
- (22) Danzinger Vineyards. (2015.) "About Us." Retrieved from <http://www.danzingervineyard.com/aboutus.html>.
- (23) Suncrest Gardens. (n.d.) "About." Retrieved from <https://suncrestgardens-farm.com> (last accessed 5 April 2019)
- (24) "The Story Behind Great River Organic Milling and Bake Great! #ExpoE-ast." *Gourmet News*, *Gourmet*, 14 Sept. 2018, [www.gourmetnews.com/story-behind-great-river-organic-milling-bake-great/](http://www.gourmetnews.com/story-behind-great-river-organic-milling-bake-great/).
- (25) "About." Great River Organic Milling, [www.greatrivermilling.com/about/](http://www.greatrivermilling.com/about/).
- (26) Hansen, N. 2017. Despite National Tensions, Arcadia Embraces Diversity. *La Crosse Tribune*, 9 April, [lacrossetribune.com/news/local/despite-national-tensions-arcadia-embraces-diversity/article\\_a1b9a828-5a2f-5b40-b15b-2bf57e01fd55.html](http://lacrossetribune.com/news/local/despite-national-tensions-arcadia-embraces-diversity/article_a1b9a828-5a2f-5b40-b15b-2bf57e01fd55.html). (last accessed 8 April 2019)
- (27) Ashley Furniture Industries. 2019. Worldwide Locations. [ashleyfurnitureindustriesinc.com](http://ashleyfurnitureindustriesinc.com), [www.ashleyfurnitureindustriesinc.com/en/company/worldwide-locations](http://www.ashleyfurnitureindustriesinc.com/en/company/worldwide-locations). (last accessed 8 April 2019)
- (28) Ashley for the Arts. 2019. About Ashley for the Arts. [www.ashleyforthearts.com/about-ashley-for-the-arts/](http://www.ashleyforthearts.com/about-ashley-for-the-arts/). (last accessed 8 April 2019)
- (29) Kemp, S. 2019. Wisconsin's Rural Schools Are Getting Squeezed By Student Loss. *WisContext*, 7 December, [www.wiscontext.org/wisconsins-rural-schools-are-getting-squeezed-student-loss](http://www.wiscontext.org/wisconsins-rural-schools-are-getting-squeezed-student-loss). (last accessed 8 April 2019)
- (30) WI DPI. 2019. WISEdash Data Files by Topic. Wisconsin Department of Public Instruction, [dpi.wi.gov/wisedash/download-files/type?field\\_wisedash\\_upload\\_type\\_value=Enrollment](http://dpi.wi.gov/wisedash/download-files/type?field_wisedash_upload_type_value=Enrollment). (last accessed 8 April 2019)
- (31) Dairy industry in Wisconsin. 2012. Wisconsin Historical Society. <https://www.wisconsinhistory.org/Records/Article/CS1744> (last accessed 4 April 2019).
- (32) Barrett, R. 2019. Dairy farmers are in crisis - and it could change Wisconsin forever. Wisconsin dairy farms are failing as milk prices fall.
- (33) History. Eau Galle Cheese. <https://www.eaugallecheese.com/History> (last accessed 4 April 2019).
- (34) State Export Data. 2018. USDA ERS - State Export Data. <https://www.ers.usda.gov/data-products/state-export-data/> (last accessed 7 April 2019).
- (35) Staff, W. C. 2018. Cheese Statistics. Wisconsin Cheese. <https://www.wisconsincheese.com/media/facts-stats/cheese-statistics> (last accessed 7 April 2019).
- (36) Nelson Cheese Factory. 2019. The Original Nelson Cheese Factory. <https://www.nelsoncheese.com/> (last accessed 7 April 2019).
- (37) List of European cheeses with protected geographical status. 2018. Wikipedia. [https://en.wikipedia.org/wiki/List\\_of\\_European\\_cheeses\\_with\\_protected\\_geographical\\_status](https://en.wikipedia.org/wiki/List_of_European_cheeses_with_protected_geographical_status) (last accessed 7 April 2019).
- (38) Sanburn, J. 2014. E.U. Wants U.S. Cheese Makers to Give Up European Names. *Time*. <http://time.com/22011/europes-war-on-american-cheese/> (last accessed 7 April 2019).



Chapter 3  
The Cutover Region: The  
Agricultural-Forest Frontier



## Daily Itinerary: Thursday, 25 July

8:30 am - Depart Eau Claire for Spooner

10:15 am - 12:30 pm - Visit Chickadee Hills Homestead Farm

12:40 pm - 2:00 pm - Lunch & Tour at Pine Brook Farm

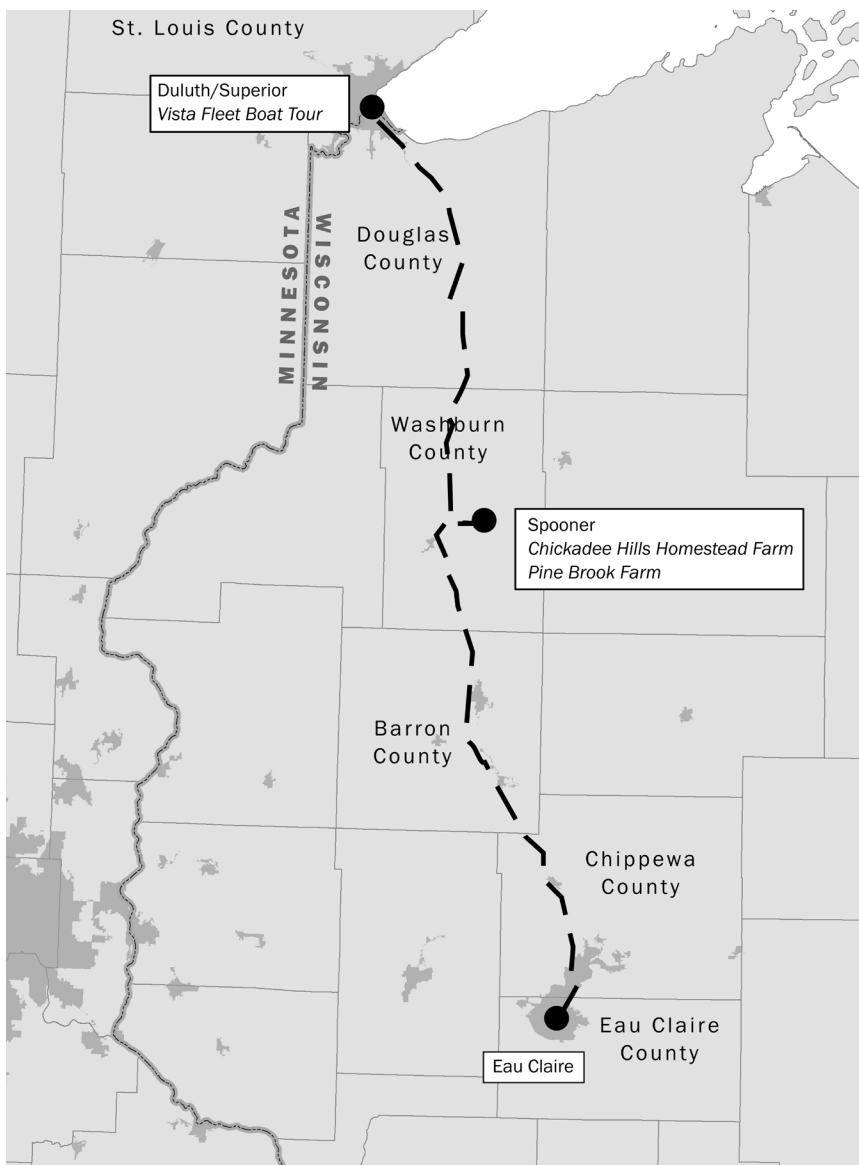
2:00 pm - Depart Pine Brook Farm for Duluth

3:30 pm - Hotel Check-in - Duluth Holiday Inn

4:15 pm - Load bus at Holiday Inn for boat tour

5:00 pm - 6:30 pm - Vista Fleet boat tour of harbor and lift bridge

6:30 pm - Dinner on your own in Canal Park



Our route north from Eau Claire to Duluth focuses on what was the agricultural-forest frontier. Lumbering companies cut down the prime forest a century ago. European immigrants tried to establish a farming economy in the cutover area but it failed to flourish. Today the area is characterized by a mixed economy, including tourism, forestry and some agriculture. In many ways, it is transitioning from a landscape of production to one of consumption. The shores of most lakes in the area are lined with second homes. The towns serve a population that changes with the seasons. The Twin Ports of Duluth and Superior connect this region and its large-scale agriculture and mining operations further west, to the national and world markets. There are many Native American reservations and communities in northern Wisconsin, but our route does not take us through any. Their sovereign status enabled the tribes to develop casino gambling, which is not legal in most parts of the U.S. Today casino revenues have transformed life in many communities.

## Beer and Wisconsin

Chippewa Falls is the home of Leinenkugel's beer. The brewery was founded in May 1867, by Prussian immigrant Jacob Mathias Leinenkugel (1842-1899) and John Miller, making it the seventh oldest brewery in the U.S. The original beer, which historically made up 90% of company production, was based on a formula Leinenkugel brought with him from Germany. The company is the oldest operating business in Chippewa Falls.

During the Prohibition Era (1920-1933), the company produced non-alcoholic or near beer (known as "Leino") as well as carbonated water. With the repeal of Prohibition, Jacob Leinenkugel's daughters mortgaged their homes to fund the restoration of the company's beer brewing vats. After several attempts to bring the beer to national U.S. markets, Miller succeeded in 2007 with the addition of a Summer Shandy ale to the Leinenkugel product line. The company has since become well known for its sweeter beers and shandies, with nine out of ten shandies consumed in the U.S. being brewed by Leinenkugel.

Brewing began in Wisconsin in the 1830s, and by the 1890s, nearly every community had at least one operating brewery. Breweries were as much a part of Wisconsin communities as churches and schools. They supplied steady employment to workers, bought grain from local farmers who in turn often fed brewery by-products to their livestock, and frequently sponsored community festivals, youth groups, and sports teams. Brewing was intimately tied to Wisconsin's people, particularly its German immigrants, who brought their knowledge and skills with them to North America. Despite beer's popularity and importance to community life, from its beginning the brewing industry had to fight numerous attempts to restrict the consumption and distribution of beer. Nineteenth century temperance activists and, most profoundly, prohibition legislation in the twentieth century, both curtailed its influence.

The process of mashing, boiling, and fermenting grain dates back thousands of years. Beer came to northern Europe around 55 BCE with Julius Caesar's Roman legions, and by the Middle Ages, it had become part of everyday life because the boiling and fermenting process made it relatively free of contamination. European settlers brought their beer with them to North America. The first commercial brewery in North America opened in New York in 1612. As immigration and settlement increased and the population moved westward, breweries followed, and by the 1850s, Milwaukee was contending with St. Louis for brewing supremacy.

Only two or three breweries were operating before 1840, but by 1860, nearly 200 breweries operated in Wisconsin, over 40 in Milwaukee alone. Virtually every town had a brewery, and in some cases, towns formed around breweries. The growth of the beer industry in Milwaukee was directly related to the city's large number of German immigrants. In the 1840s, Milwaukee began to take on a distinctly German character as waves of immigrants seeking economic opportunity and religious and political freedom settled in the area. German consumers' demand for lager, a German brew, greatly expanded the city's beer industry and provided a large customer base



Figure 3.1: Leinenkugel's Logo. (source: Nan Palmero, Flickr)

for brewers. Many of these German immigrants were experienced brewers, too, saving owners both time and money in training. The skills and experience of the German immigrants combined with Milwaukee's abundant natural resources -- a good harbor, lumber for barrels, and ice for storage -- made Milwaukee, and Wisconsin, a giant in the brewing industry.

Despite beer's popularity among Wisconsin immigrants and the rapid growth of breweries, alcohol consumption became a controversial issue in Wisconsin. Many of Wisconsin's first white settlers came from New England, which was a stronghold of temperance. Temperance societies formed around the state, and even Milwaukee, the center of Wisconsin brewing, had one (the Sons of Temperance Grand Division) by 1848. Several northern states passed prohibition laws in the 1850s, and although Wisconsin did not go that far, an 1849 law made tavern owners responsible for any costs associated with supporting drunkards. Not surprisingly, Wisconsin's German population bitterly opposed the law, arguing that it undermined individual responsibility and imposed too harsh a penalty on tavern owners. In 1851, the Legislature replaced the law with a milder version.

Several more attempts were made to restrict alcohol production and consumption in the 1850s, but no major measures were passed again until the 1870s. In 1872, the Legislature passed the Graham Law, which again made tavern owners responsible for selling liquor to known drunks. Milwaukee's city attorney challenged the law but the Wisconsin Supreme Court held that the Legislature had the right to regulate the sale of alcohol. With no luck in the courts, German Americans shifted attention to the politicians themselves, helping to defeat the Republican administration that had passed the Graham Law in 1873. The Graham Law was replaced the following year with a law that encouraged towns to work with taverns to prevent drunkenness. The new version of the law turned out to be a workable compromise for both German Americans and temperance activists, staying in effect for many years.

Temperance represented something far more complicated in Wisconsin than a simple battle between those who drank and those who did not. German immigrants often remained strongly attached to their historical and cultural roots, frequently taking uniform stands on political and social issues such as alcohol and German-language education in schools, and resisting efforts at assimilation to Yankee cultural norms. Moreover, saloons were increasingly seen as urban institutions and came under attack by rural people who sought to resist the problems associated with them.

Temperance, therefore, became symbolic of battles between Yankees and Germans, urban and rural residents, and teetotaling Protestants and seemingly more broad-minded Catholics. All of these forces grew in intensity, particularly during World War I when anti-German sentiment was especially strong, and contributed to the passage of national prohibition, the Volstead Act, in 1919.

With Prohibition, many breweries began to make near beer, while others began to produce soda, ice cream, and cheese. Some brewers made malt syrup and other products that individuals could use for home brewing. Many breweries eventually had to close—some forever. In 1926, Wisconsin voters approved a referendum amending the Volstead Act that allowed the manufacture and sale of beer with 2.75% alcohol. In 1929, voters repealed Wisconsin’s prohibition enforcement law, the Severson Act. Pledging loyalty to the “will of the people” as expressed in these referendums on alcohol, Wisconsin Senator John J. Blaine proposed a constitutional amendment for the repeal of prohibition. The U.S. Senate modified Blaine’s resolution to satisfy anti-prohibitionists and passed the measure immediately. On December 5, 1933, the Twenty-first Amendment was ratified and national prohibition ended.

Today, brewing remains an important part of Wisconsin life, although the brewing industry has changed dramatically from its small community origins. Consolidation and commercialization has brought national, and even international, distribution for some Wisconsin breweries, while a few small brewers have survived through niche marketing and regional loyalty. (1)

## Barron, Barron County, and Turkey Processing

Barron, Wisconsin, is a small city just 40 miles east of the St. Croix River, which acts as a natural border between Minnesota and Wisconsin. The town itself is rather small, with an estimated population of 3,318 in 2017. Starting in 1884, Barron experienced a rise in population due to a railroad stop being built from Minneapolis to Chicago (Soo Line Depot). Today, Barron is the center of county government and is open to more than 200 businesses and industries surrounded by hundreds of farms. The major industries in Barron are a turkey processing plant, Momentum Engineering and Fabrication (fabrication for food processing conveyors), and N-Tech, Inc. (holder of many patent designs in the agricultural industry) (2).

In 1941, Wallace Jerome formed Jerome Turkey Farms. Though the turkey processing plant has had many name changes over the years, today it is well known throughout the community as Jennie-O Turkey Store. In 2001, two of the biggest turkey processing companies (Jennie-O Foods, Inc. and The Turkey Store Company) consolidated under the company Hormel to Jennie-O Foods Turkey Store. Barron’s turkey processing plant is the company’s only location in Wisconsin; the remainder of locations are located in Minnesota. Today, Jennie-O Foods is a recognized leader in the turkey industry. The company offers more than 1,500 different products, which are distributed to more than 60 countries. Although we will not be visiting the processing plant, Barron serves as an extraordinary example of rural towns in Wisconsin and Minnesota attracting recent refugee/immigrant populations (especially Somali) (3).



Figure 3.2: Location of Barron County.

Somali people began moving to Barron in the 1990s. In the 2010 census, around 9% of the population identified as Black or African-American, many of them Somali. And this year, the city had its first Somali city council candidates (4).

## Spoooner and Washburn County

Spoooner’s nickname is “Crossroads of the North”, because it was a hub for several railroad lines and now is the junction of two U.S. Highways, 53 and 63, and State Highways 70 and 253. It is the trading and shipping center for a large but poor and thinly settled area. Big McKenzie Lake, about 12 miles northwest of the city, attracts many tourists, owners of second homes, and retirees. The city has a branch of the University of Wisconsin’s Agriculture Experiment Station, which studies solutions to the problems created by the sandy jack-pine country. In early 1895, it developed the rationale for the present use of windbreaks and shelterbelts to recuse the effect of wind erosion on the light soils. The city’s population was 2,597 as of 2017 (5).



Figure 3.3: Location of Washburn County.

# FIELD VISITS

## Chickadee Hills Homestead Farm

10:15 am - 12:30 pm

<https://www.chickadeehillshomestead.com>

Chickadee Hills Homestead is a local sustainable pasture-raised heritage hog farm located in Spooner, Wisconsin. The farm raises heritage breed Mangalitsa hogs that are fed only non-GMO feed. According to their website, the farm raises Mangalitsa hogs due to their delicious flavor and red meat. With less than 60,000 in the world, and known as the “Kobe beef of pork” or “olive oil on legs,” Mangalitsa hogs are a rare hog species from Hungary that is claimed to produce the tastiest pork in the world. Chefs consider Mangalitsa a delicacy due to

its high 50% fat content. These pigs are also visually stunning, looking like a hybrid between a sheep and a pig. (7)

## Pine Brook Farm

12:40 pm - 2:00 pm

<https://www.pinebrookfarmwi.com>

Built in 1914, Pine Brook Farm was originally owned and used as a retreat by Dr. Arthur Gillette, for whom Gillette Children’s Hospital was named. The 110-foot barn was central to the family’s dairy and beef operations. The Gillette family owned the farm until 2012. The farm was then repurposed by Jason and Michele Martell to a restaurant that offered a unique dining experience in the area. Today, it is a popular wedding venue. (8)

Spooner is located in Washburn County, which is noted for winter tourism. There are 240 miles of groomed trails that wind through public forests and across private land covering literally hundreds of thousands of acres. Volunteer local snowmobile clubs maintain the trails. The population in 2017 was 15,758, a decrease of 1% since 2010. The median household income is \$46,500. The poverty rate is 12% (6).

2,133. The riverway is best known for its nationally renowned smallmouth bass fishery. Other fish species present include wall-eye, northern pike, sturgeon, muskellunge, and catfish. Today, the riverway is a popular recreational destination for canoeing, boating, camping, and hunting. The National Park Service manages the area overall, operating out of two visitors’ centers, one in St. Croix Falls, Wisconsin, and another in Trego, Wisconsin.

## St. Croix National Scenic Riverway

Here we again encounter the St. Croix River. Consisting of over 252 miles of river, including the St. Croix River (on the Wisconsin/Minnesota border), and the Namekagon River (in Wisconsin), the St. Croix National Scenic Riverway is a federally protected system of riverways. It is one of the original eight National Wild and Scenic Rivers (also discussed in Chapter 1), largely due to the legislation pushed by Senators Walter Mondale of Minnesota and Gaylord Nelson of Wisconsin. The riverway runs through eight counties in Wisconsin (Bayfield, Burnett, Douglas, Pierce, Polk, St. Croix, Sawyer, and Washburn) and three in Minnesota (Chisago, Pine, and Washington). The biggest nearby city is St. Croix Falls, Wisconsin, with a population of around

## Superior and Douglas County

The population of Superior in 2017 was 26,705, of which 91.5% was White, 2.6% Native American, 1.4% Black or African American, and 3.1% two or more races. The population declined 2.4% between 2010 and 2017. The median income was \$42,680 and the poverty rate 20.3% (9). Superior is located in Douglas County, which had a population in 2017 of 43,509, a decrease of 2% since 2010. The population of the county is 92.9% white, and the poverty rate is 11.6% (10).



Figure 3.4: The St. Croix National Scenic Riverway in Interstate State Park. (source: Wikimedia Commons)



Figure 3.5: Location of Douglas County.

About the time of the European arrival, the Duluth–Superior region transitioned from being predominantly Dakota to being predominantly Ojibwe/Chippewa (Anishinaabe), one of the many Algonquian language people. Under pressure from the Ojibwe, the Dakota moved west. The first-known Europeans to visit the area were French who first arrived in 1618 and later established an extensive fur trade with the Native Americans. This economy lasted for about 250 years and involved French, English, and later American companies.

Douglas County was organized at the site of one of the major water highways used by early travelers and voyagers of inland America. This water trail, the Bois Brule–St. Croix River Portage Trail, was the most convenient connecting link between Lake Superior and the Mississippi River.

In the nineteenth century, spurred by the prospect of lucrative shipping on the Great Lakes and exploitation of the iron mines, businessmen from Chicago and St. Paul developed the City of Superior. There was a boom period from 1888 to 1892, when the population reached 34,000. The contemporary economy is based on the transportation industry, which accounts for more than 1,000 jobs. The Twin Ports of Duluth–Superior is the largest port on the Great Lakes. Both seagoing ships and “lakers” visit the port to take on bulk cargoes of taconite ore or grain, and deliver coal. Husky Energy operates a refinery in Superior. The refinery is located along a pipeline that carries oil from western Canada to the refinery.

## Duluth

Duluth is a major port city in the U.S. and is the fourth largest city in Minnesota. Duluth serves as the major metropolitan area on Lake Superior and acts as a crossroads between the Twin Cities and northern Minnesota. Additionally, Duluth lies on the westernmost point of the Great Lakes, and is accessible to oceangoing vessels from the Atlantic Ocean 2,300 miles away, via the Great Lakes and the St. Lawrence River. Besides being a major exporter of Minnesota’s raw goods, Duluth serves as a major tourist destination for the Midwest. Duluth is also the starting point for many tourists who take road trips along Minnesota’s North Shore. In 2017, the population totaled 86,293, of which 89.9% were White, 2.7% Black or African American, and 1.9% Native American. The median income was \$47,247 and the poverty rate was 20%.

Unlike most of central and southern Minnesota, Duluth’s topography is dominated by a steep hillside that climbs from Lake Superior to high inland elevations. Because of the steep streets, it has been called “the San Francisco of the Midwest.” Duluth experiences slightly different weather than that of the Twin Cities, due to its proximity to Lake Superior. Duluth has a humid continental climate, which includes long, snowy, and very cold winters. However, during the summer, it has been called “The Air-Conditioned City” due to the summertime cooling effect of Lake Superior. A famous quote about the climate is “The coldest winter I ever spent was a summer in Duluth,” though there is no proof that Mark Twain, who the quote is attributed to, ever said it.

Duluth was first scouted as a French fur-trading post in 1679 by Daniel Greysolon, Sieur du Lhut (the town’s namesake) in an area

previously occupied by the Ojibwe and, before them, the Dakota. The 1854 Treaty of LaPointe ceded Lake Superior’s south shore to the federal government, and trapping gave way to timber extraction, which coincided with the emergence of Duluth as a city.

The sites of Superior and Duluth were first settled in the early 1850s, with hundreds of people seeking their fortune speculating rich copper ore. Dredging of the harbor began in 1861, ensuring adequate shipping channels. Also in 1861, planning began for the Lake Superior and Mississippi Railway connecting Duluth and St. Paul. By the time the railroad was completed in 1870, a new dock and grain elevator stood ready to transfer cargoes from rail to ship.

The Duluth Ship Canal was excavated privately in 1871, and allowed ships to enter the bay on the Duluth side, through Minnesota Point. Construction of docks in the new inner harbor began soon afterward. Growth accelerated throughout the 1880s, as grain, flour, coal, and iron ore passed through the ports. The famous aerial lift bridge was erected in 1905, to provide an easier crossing of the canal for the growing “Park Point” population. At the turn of the century, lumber proved another important cargo. This continued until 1920, when the focus of the lumber industry shifted to the Pacific coast.

Duluth reached its heyday in the 1910s, and by 1920 had emerged as the second-ranking urban center in the region (behind Minneapolis–St. Paul). The “Twin Ports” made up the world’s greatest freshwater port. The harbor was the focus of all rail routes to the Mesabi and the Twin Cities, and direct connections to the American and Canadian transcontinentals and the Twin Cities–Chicago corridor. However, the timing in Duluth–Superior’s emergence in the nation’s transportation evolution was not quite right. The Twin Ports retained their massive tonnages, especially in ore, grain, and coal. But larger, faster, and more specialized ships and trains increased efficiency and cut employment in transportation. Because of railroad improvements and the Panama Canal, the Great Lakes waterway never did develop as the major link in the northern transcontinental general cargo route. In 1920, the Twin Ports had catapulted to one-fourth the population of the Twin Cities, but by 1980, they had fallen back to one-tenth. Duluth’s population peaked at 106,884 in 1960.

The centerpiece of the urban area in 1980 was still the spacious harbor, but some of the great, dredged promontories on the bay were vacant and overgrown, edged by rotted pilings. Hundreds of acres of railway yards were used at a fraction of their capacity. Other hundreds of acres were virtually abandoned. But even in a depressed steel economy, millions of tons of taconite pellets moved through the ore docks in western Duluth and the southeastern outskirts of Superior. Tens of millions of bushels of grain moved through the port. On the downtown Duluth waterfront, some of the big, multi-storied buildings that housed the great hardware and grocery wholesalers at the turn of the century were subdivided, rehabilitated, and partly occupied by a new generation of light industry and offices. Impressive rehabilitation and redevelopment gradually lifted the face of the railroad-era business district. New housing in the central and eastern heights continually replaced deteriorated housing in the old cores and industrial west end.



The Twin Ports present a dramatic view of the powerful auto-era thrust of service growth, federal and state expenditures, and industrial transformation. Now, Duluth-Superior serves as a center for health services, business services, shopping, and communication. Duluth is also actively attempting to improve its reputation as a tourist destination, with the renewed vibrancy of Canal Park along the harbor and as a stop for Great Lakes cruise ships (11).

## Port of Duluth-Superior

Today, Duluth is the number one Great Lakes port in total cargo volume. Nationally, it is number one in iron ore tonnage and number five in coal tonnage. By far the largest and busiest on the Great Lakes, the Port of Duluth-Superior handles an average of 35 million short tons of cargo and nearly 900 vessel visits each year. Ranked by cargo tonnage among the top 20 ports in the U.S., Duluth-Superior is a full-service, multimodal hub for domestic and international trade. There are 20 privately owned and operated docks along 49 miles of waterfront in this harbor, plus one general cargo terminal, a fueling depot, tug/barge services, and a shipyard with two dry docks. Primarily a natural resources port, docks in the “Twin Ports” of Duluth, Minnesota, and Superior, Wisconsin, handle a diversified commodities base ranging from coal, iron ore, grain, and limestone to cement, salt, wood pulp, steel coil, wind turbine components, and other heavy lift/dimensional equipment. Over 11,500 jobs are dependent on cargo shipments in and out of this Port.

Two distinct types of ships visit the Port on a regular basis. “Lakers” are bulk carriers specially built to ply the Great Lakes St. Lawrence Seaway. In Duluth-Superior, lakers constitute over 90% of vessel traffic. The largest U.S. lakers are over 1,000 feet (300+m) long, 105 feet (32m) wide and of 56 feet (17m) hull depth, with a carrying capacity of nearly 70,000 short tons. Too large to fit through locks at the Welland Canal which bypasses Niagara Falls, these “lakers” spend their working lives hauling bulk commodities like iron ore, coal, and stone between ports on four

of the five Great Lakes. While some U.S. lakers and all Canadian fleets are small enough to transit the St. Lawrence Seaway all the way to Quebec and the Gulf of St. Lawrence, their hulls are built to Great Lakes strength standards and are not certified for ocean passages. These vessels vary greatly in configuration and cargo capacity, but are capable of hauling between 10,000 and 40,000 tons per trip. Since the modern Seaway opened in 1959, oceangoing vessels affectionately called “salties” have made the 2,342-mile trek from the Atlantic Ocean to Duluth-Superior. At a maximum size of 740 feet (225.5m) in length and beam/width of 78 feet (23.8m), these Seaway-max vessels are small enough to transit all 16 lock sets along the Great Lakes St. Lawrence Seaway.

Iron ore and coal account in roughly equal proportions for about 80% of the Port of Duluth-Superior’s total tonnage. About 14 million tons of low-sulphur coal from Montana and Wyoming are transported by water each year to feed utilities and manufacturing plants on the Lower Great Lakes. Outbound shipments of grain harvested in the Midwest and destined for delivery in Europe and Africa account for 5 to 10% of the Port’s annual tonnage. Inbound shipments of bulk commodities like limestone, salt, and cement comprise another 10%. General freight rounds out tonnage figures each year.

## Canal Park

Canal Park was created by the transformation of an old warehouse district and railroad yards into a landscape including restaurants, shops, cafes, hotels and a large convention/sport facility. Now an important Duluth landmark for both tourists and locals, it features a 4.2 mile long lake walk, a lighthouse pier, the Lake Superior Maritime Visitor Center, the Great Lakes Aquarium (only fully freshwater aquarium in the U.S.), and the William A. Irvin floating ship museum. The project was made possible by changes to the plan to build the freeway through the city. The 1975 plan of the interstate highway builders was to construct a lake front freeway on pillars. Local leaders convinced



*Figure 3.6: Ships on the Great Lakes.*  
*Left: a “laker,” or Great Lakes shipping vessel. (source: EPA)*  
*Right: a “salty,” or both ocean and lake shipping vessel. (source: NOAA)*

them to shorten the freeway, move the road inland, and tunnel under a portion of the city. Because the new road is shorter than the original plan, \$74 million was available to create amenities, such as new parks, murals, three tunnels, and a dramatic upgrading and repaving of downtown streets (12).

## FIELD VISIT

### **Vista Fleet Boat Tour of Harbor and Lift Bridge**

**5:00 pm - 6:30 pm**

<https://www.vistafleet.com/>

This narrated cruise tour around the Duluth-Superior harbor offers views of the city's scenery and landmarks as well as education about its history and shipping economy.

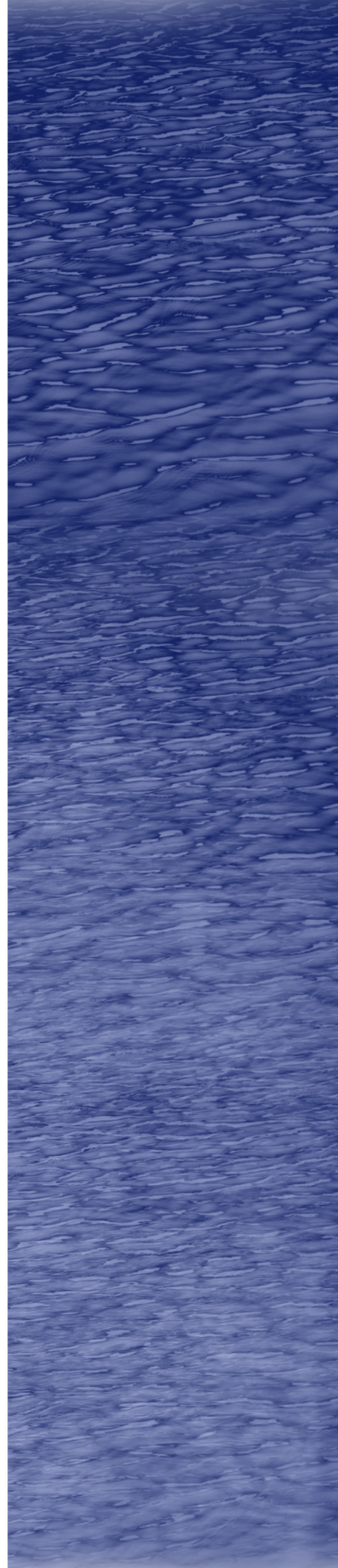
*Cash bar and light concessions available on board for purchase.*



# References

- (1) Wisconsin Historical Society. (2019.) "Brewing and Prohibition." *Turning Points in Wisconsin History*. Retrieved from <https://www.wisconsinhistory.org/turningpoints/tp-051/>
- (2) "The City of Barron, Wisconsin." (n.d.) Retrieved from <http://www.cityofbarron.com/>
- (3) Jennie-O. (2019.) "About Us." Retrieved from <https://www.jennieo.com/>
- (4) "Barron City Council Election Features First-Ever Somali Candidate." (April 1, 2019.) Wisconsin Public Radio. <https://www.wpr.org/barron-city-council-election-features-first-ever-somali-candidate>.
- (5) City of Spooner. (2011.) "Home." Retrieved from <http://cityofspooner.org/>
- (6) Washburn County Government. (2019.) "Washburn County Government Welcomes You." Retrieved from <http://www.co.washburn.wi.us/>
- (7) Chickadee Hills Homestead. (n.d.) "About Us." Retrieved from <https://chickadeehillshomestead.com/>
- (8) Pine Brook Farm. (2016.) "Home." Retrieved from <https://www.pinebrookfarmwi.com/>
- (9) City of Superior. (n.d.) "Home." Retrieved from <http://www.ci.superior.wi.us/>
- (10) Douglas County, Wisconsin. (n.d.) "Home." Retrieved from <https://www.douglascountywi.org/>
- (11) Lanegran, David A., & Laura Smith. "Duluth Minnesota; Reinvention of an American Industrial Center." *Geographische Rundschau International Edition Vol. 5*, No. 4/2009, pp.42-47.
- (12) Duluth Seaway Port Authority. (n.d.) "Port of Duluth-Superior." Retrieved from <http://www.duluthport.com/port.php>
- (13) Canalpark.com. (2019.) "Canal Park, Duluth, MN." <https://canalpark.com/>

Chapter 4  
Between Duluth and the  
Twin Cities



## Daily Itinerary: Friday, 26 July

8:15 am - Depart Duluth for Cloquet

9:00 am - 10:00 am - Fond du Lac Cultural Center

10:00 am - Depart Cloquet for Grantsburg

11:30 am - 12:45 pm - Lunch from Burnett Dairy at Brickfield Brewing

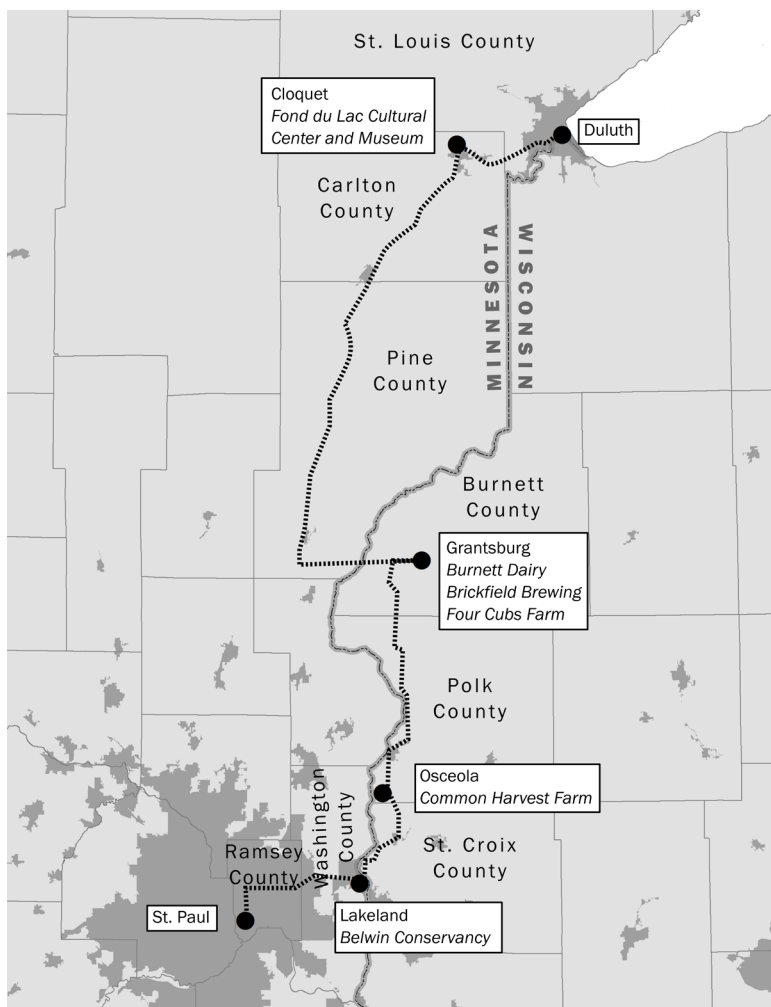
1:00 pm - 2:30 pm - Four Cubs Farm Tour

2:30 pm - Depart Four Cubs Farm for Common Harvest Farm

3:15 pm - 6:00 pm - Common Harvest Farm Tour & Dinner

7:15 pm - Brief stop for buffalo viewing near Lakeland, Minnesota

8:30 pm - Arrive at Macalester



Friday's tour begins with a visit to the Fond du Lac Cultural Center and Museum and a discussion of the changing role of Native Americans in the U.S. The freeway corridor from Duluth to the Twin Cities is heavily traveled and experiencing urban development in several locations. The original vegetation was similar to that of northern Wisconsin and was logged over a century ago. Great forest fires in the area promoted a change in forest management practices, and now much of the area is reforested. Recreation in various forms dominates the economy of the Minnesota-Wisconsin border region, but agriculture is very important in several locales. We will visit a large-scale family run dairy farm and a farm engaged in community-supported agriculture.

## Carlton County

As we leave Duluth, we will pass through Carlton, Pine, and Burnett Counties as we head south toward the Twin Cities metro area. Although the small settlements in these counties have relatively easy access to Interstate 35, the major highway that runs from Duluth to Laredo, Texas, they have faced declining and aging populations as well as declining economies over the past few decades.

Carlton County is home to the communities of Cloquet, Carlton, and Moose Lake, and exemplifies the beginning of landscape transition from lumber to agriculture. The population of Carlton County was 35,438 in 2017. It was 89% White, 6% Native American, 1.6% Black or African American, and 2.6% two or more races. The median income was \$58,800, and the poverty rate was 9.3% (1).



Figure 4.1: Location of Carlton County.

## Cloquet

Cloquet is located west of Duluth and had an estimated population of 11,938 as of 2017. Though the coniferous forests that once covered northern Minnesota have been greatly reduced, Cloquet's major industry is the manufacture of wood products. Because the 395 foot drop in the St. Louis River prevented logs from moving to Duluth, Cloquet became a center for sawmilling in the watershed. At one time, the lumber companies owned every house in town. Today the main industry is still the manufacturing of wood products and paper. Modern forest management has enabled the industry to continue. The Northwest Paper Company, now Potlatch Co., is famous for its advertising campaign based on the image of a Royal Canadian Mounted Police Officer. The company produced an annual calendar that was distributed freely to their customers and others. The red color was used to show the quality of the printing paper produced by the Company. It was the longest running series in the history of American Advertising.

The present city is built upon the ashes of the earlier town destroyed by the October 1918 fire. Cloquet suffered the heaviest material loss of the towns affected by the fire; its residential and

business sections were almost entirely destroyed. Quick action on the part of railroad officials and citizens saved the lives of all but five. Residents who fled from the fire returned and built a new city (2). Cloquet is also notable for having a consumers' cooperative, founded in 1910, that half of the population belonged to in the 1950s. Since cooperative business was only 0.5% of the American economy, this was a significant statistic (3).

A portion of Cloquet is within the Fond du Lac Indian Reservation, and the city is home to the Fond du Lac Tribal and Community College, which offers associate degrees and currently enrolls 2,328 students (4).

## FIELD VISIT

### Fond du Lac Cultural Center and Museum

9:00 am - 10:00 am

<http://www.fdlrez.com/museum/>

The Fond du Lac Band is one of six Chippewa Indian Bands that make up the Minnesota Chippewa Tribe. The Fond du Lac Cultural Center and Museum helps try to preserve the local indigenous culture. The museum offers many artifacts from the past, including artifacts (e.g. arrowheads, a pipe bowl, an axe), arts and crafts, clothing, canoes, photos, and more.

The Chippewa, otherwise known as Ojibwa, are an Anishinaabeg group of Indigenous Peoples in North America. The Ojibwa are one of the largest indigenous ethnic groups north of the Rio Grande, and span throughout northern Minnesota, northern Wisconsin, northern Michigan, and much of Canada (Figure 4.2). In Canada, the Chippewa are the second-largest First Nations population, and in the U.S., they have the fifth-largest population among Native American tribes, after the Navajo, Cherokee, Choctaw, and the Lakota/Dakota/Nakota people. As of 2010, there are around 170,000 identifying Ojibwa in the U.S. The Fond du Lac Band of the Chippewa inhabited the area along the lower courses of the St. Louis River, where the present-day cities of Duluth, Minnesota, and Superior, Wisconsin, developed. Due to their claim to an important trading position, many French fur traders developed trade routes and treaties with the Fond du Lac Band. The Fond du Lac Band's regional economic influence eventually helped establish the American Fur Company trading post in what is now the Fond du Lac neighborhood of Duluth. Today, much of the Fond du Lac Band influence stems from the Fond du Lac Indian Reservation, which consists of 154 square miles of tribal lands. While only around 3,000 people live within the reservation, many live in nearby cities such as Cloquet or Duluth. Today, the tribe owns two casinos: Black Bear Casino in Carlton, Minnesota, and Fond du Luth Casino in Duluth. (5)



Figure 4.2: Lands Ceded by the Ojibwa to the U.S. between 1836-1854. Ojibwa territory also spans across much of Canada. (source: Great Lakes Indian Fish & Wildlife Commission)

## Carlton

When the building of the Northern Pacific Railroad began in 1870, the first spike was driven in Carlton – then named Northern Pacific Junction – the junction of the transcontinental line with the older Lake Superior and Mississippi line. The town was renamed Carlton in 1885 in honor of a settler in Duluth. In the past, it was surrounded by dairy farms. Today, the town calls itself “the Gateway to Jay Cooke State Park,” a park in the St. Louis River Valley (6).

## Moose Lake

Moose Lake, a translation of the original Ojibwa name for the lake in the town, came into existence in the early 1860s as an overnight stop on the stage route between Superior and St. Paul. It consisted then of a hotel, barns, a few dwellings, and several tepees. The Lake Superior-Mississippi River Railroad was constructed in the early 1870s; most of the work of building grades, bridges, and track was done by hand. As its roadbed was about 3 miles west of the old stage line, the people of the original hamlet moved to a site near the railroad, now Moose Lake. The depot was built around 1873. The early engines, vastly different from modern locomotives, were wood burning and hence were forced to pick up a fresh supply of fuel every five to six miles; a full-size train was made up of 10 to 18 freight cars.

The only work of the early settlers was logging. The country was covered with white pine, which was cut, hauled to the edge of the lake, and floated to the sawmill. The scattered settlers came to town for supplies twice a year, in the spring and fall. The trips were made by sled while frost and snow covered the ground, because the mud and the lack of bridges made travel almost impossible during the summer months.

Like nearby Cloquet, Moose Lake was destroyed by one of the nation’s most devastating forest fires, which swept over northeastern Minnesota during the afternoon and night of October 12, 1918. Fifty to 75 separate fires merged and fanned to huge proportions by a 70-mile-per-hour wind.

The flames advanced over a vast area with incredible speed. More than 8,000 square miles were in the path of the flames and approximately 2,000 square miles were completely burned over. Nearly 400 persons lost their lives, 2,000 suffered burns and about 13,000 were left homeless. Property loss, including standing timber, was approximately \$25 million in 1918 dollars. One hundred residents of Moose Lake died in the fire. Because of these fires, regulations on the disposal of the wood debris left after logging and spark protection on locomotives were established (2).

Today, the town is proud to be the “Agate Capital of the World,” displaying the 108-pound world record largest agate at a local bank, and holding an “Agate Days” celebration each year (7).

## Pine County

The population of this county in 2017 was 28,874, down 1.8% since 2010. The White population was 91.6 % of the total. Median income was \$47,873. The poverty rate was 12.2% (8).



Figure 4.3: Location of Pine County.

## Hinckley

Named in honor of Philadelphia, Wilmington and Baltimore Railroad Company President Isaac Hinckley, the town grew as a railroad division point and became a supplier to the logging and milling industries of the region in the mid- to late-1800s. The town never fully recovered after the raging forest fire of 1894, in which more than 400 persons lost their lives. The hero of the disaster was railroad engineer Jim Root, who rushed a train from Sandstone to Hinckley and gathered 300 trapped residents. Root backed the train through a wall of flames and on over to the burning Grindstone Creek bridge all the way to Duluth. His hands were burned fast to the hot metal throttle (9). Today, most of the economic activity in town is dependent on Interstate 35. The city serves north- and south-bound travelers. An Indian casino owned by the Mille Lacs band of Ojibwa plays a primary role in the local economy. Its hotel is the tallest building between the Twin Cities and Duluth-Superior.



## Pine City

This city is located near the site of an Ojibwa village. Pine City is a translation of the former Ojibwa village “Chengwatana,” now the name of the outlet of Cross Lake into Snake River, which runs through the town. The railroads began promoting this area as a farming region after the lumber companies had exhausted the white pine forests in the area in the 1890s. The promotion paid off – a number of immigrants, especially Bohemians, came to the area to farm. Tourism also took hold in the area. At the turn of the century, Pine City became a fashionable weekend retreat for people from the Twin Cities and St. Cloud – dinner and dancing places sprung up, and steamboats carried resorters around Lake Pokegama. Today, it is occupied by commuters who work in the Twin Cities, being an arts town and commuter town to jobs in the Minneapolis–St. Paul Metropolitan Area. (10)

## Casinos and Native American Economies

Anna Russert, Macalester student

Duluth, Carlton, and Hinckley are all home to Ojibwa-owned casinos. Because reservations have tribal sovereignty, meaning the federal government, not the states, has the power to regulate them, states generally cannot ban casinos within reservations, creating a unique economy. This resulted from a 1976 Supreme Court decision regarding one Ojibwa couple, which held that states can neither tax nor regulate Native Americans living on reservations. The Seminole Tribe in Florida was the first to open a high-stakes bingo hall, its right to do so upheld by the courts in 1981. Casinos now operate throughout the country. (11)

The economic impact of casino gaming has been significant. The Seminole Tribe’s budget today is more than 100 times what it was before they began opening gaming facilities (11). In one California reservation, the opening of a casino took the reservation from 80% unemployment to none (11). Casino revenue also allows for tribes to provide social and educational programs. The Mille Lacs Band in Minnesota has built two schools that teach fluency in the Ojibwa language (12).

Opinions on casinos are not all optimistic, however. The ambiguities in legislation that regulates tribes mean that if laws change, and tribal economies are too reliant on gaming, their economic fortunes could crash (11). Others are worried about the cultural impact of building casinos. One member of the Jamul Band of Mission Indians in California filed lawsuits in the 1990s to try to stop casino development on her reservation, feeling that it was disrespectful to the land where her relatives lived (11).

Casinos have become a recognizable part of the reservation landscape and a significant factor in many Native American tribes’ economies. Time will continue to tell if leveraging tribal sovereignty to create these businesses will support reservation economies.

## Fire Prevention Campaign

Federal forest management dates back to 1876 when Congress created the office of Special Agent in the U.S. Department of

Agriculture to assess the quality and conditions of forests in the U.S. Congress passed the Forest Reserve Act of 1891 authorizing the President to designate public lands in the West into what were then called “forest reserves.” Responsibility for these reserves fell under the Department of the Interior until 1905, when President Theodore Roosevelt transferred their care to the Department of Agriculture’s new U.S. Forest Service. Much of the agency’s activity centered on mapping the national forests, providing trail access, administering sheep and cattle grazing permits, and protecting the forests from wildfire, game poachers, timber and grazing trespass, and exploiters. In other words, they acted as custodians of the national forests.

The Forest Service advised states in establishing forest policies, assisting them in surveying their forest resources (mainly timber), and finally helping forest owners with practical forestry problems. In 1911, the Forest Service was authorized to work together with its state counterparts to fight fire on federal, state, or private land. Previously, if a fire started on private or state land, the Forest Service could not help until the fire entered national forest land. Fire suppression became one of the agency’s major functions.

In 1941, Americans were shocked that the war had come directly to the American mainland. Fear grew that more attacks would bring a disastrous loss of life and destruction of property. There was also a fear that incendiary shells exploding in the forests of the Pacific Coast would ignite numerous raging wildfires. With experienced firefighters and other able-bodied men deployed in the war, communities had to deal with wildfires as best they could. Protection of forests became a matter of national importance, and a new idea was born. If people could be urged to be more careful, perhaps some of the fires could be prevented. To rally Americans to this cause, and convince them that it would help win the war, the Forest Service organized the Cooperative Forest Fire Prevention (CFFP) program with the help of the War Advertising Council and the Association of State Foresters. Together, they created posters and slogans, including “Forest Fires Aid the Enemy,” and “Our Carelessness, Their Secret Weapon.” (13)

In 1942, forests and their animal inhabitants were celebrated in Walt Disney’s wildly popular motion picture, “Bambi.” Disney allowed the CFFP program to use the film’s characters on a 1944 poster. The “Bambi” poster was a success and proved the success of using an animal as a fire prevention symbol. However, Disney had only loaned the characters to the campaign for one year. The CFFP would need to find an animal symbol that would belong to them, and nothing seemed more fitting than the majestic, powerful (and cute) bear. On August 9, 1944, the Forest Service authorized the creation of Smokey Bear, and the first poster depicted a bear pouring a bucket of water on a campfire. Smokey Bear soon became popular, and his image began appearing on more posters and cards. Figure 4.4 shows some of these animal symbol campaigns. (14)

Now, attention focused on wildfire prevention remains crucial, but forest management policies have changed. Controlled burning is advocated as a way to reduce the possibility of major fires. Some fires in remote wilderness areas are allowed to burn on the theory that fire is part of the natural ecosystem. There is also disagreement on the impact of climate change on the potential for wildfires.



Figure 4.4: Top: Early images from the fire prevention campaign. Bottom: A modern campaign ad featuring Smokey Bear. (source: U.S. Forest Service)

## Burnett County

We reenter Wisconsin at Burnett County. The population of this county was 15,352 in 2017, down 0.7% since 2010. The population is 91.8 % White. The median household income is \$45,800 and the poverty rate is 12.7%. (15)



Figure 4.5: Location of Burnett County.

## Grantsburg

Located near the St. Croix River, Grantsburg claims to be the “Gateway to Crex Meadows,” the largest wildlife area in Wisconsin. Grantsburg itself is a modest village in Burnett County, with a population of 1,341 (16). However, the town is indeed the main portal to enter Crex Meadows. Crex Meadows is a wildlife area that consists of marshes, wetlands, brush prairies, and forests (17).

## Rise and Fall of Industrial Agriculture

At the end of the Wisconsin Glacial period (10,000 – 15,000 years ago), a layer of glacial till ranging from 3 to 300 feet covered what is now Burnett County. The deepest part of the lake evolved into shallow sedge marshes and low ridges. The uplands are sandy, while the lowlands have several feet of organic matter over a layer of sand that varies from 100 to 300 feet. The area known as the Pine Barrens extends from Burnett County in western Wisconsin northward to Bayfield County on Lake Superior. The original vegetation was apparently a pine savannah or “bush prairie” with a few large pine trees per acre as well as grasses and flowers. Natural occurring fires maintained this community. After agricultural settlement, the suppression of fires resulted in the growth of an oak and jack pine forest.

In 1854, Canute Anderson established himself at what is now Grantsburg on the Wood River, just south of the large marshes. There he built a dam, a sawmill, hotel, and store. Population growth was slow until a group of Norwegian immigrants took up homesteads in 1863. Even though Burnett County split from Polk County in 1864, the entire county was governed as one township between 1865 and 1875, with Grantsburg as the seat of local government. Grantsburg soon eclipsed the St. Croix River towns and Hickerson, which was located where the tote road from St. Paul to Bayfield crossed the Wood River about one mile south of Grantsburg. Lumbermen privately built the tote road to provide connections between the river towns in Minnesota and the pineries in northern Wisconsin. The first settlers were interested in harvesting timber. The sawmills bustled during the 1860s, and farmers put the cutover land into crops. By 1875, the settlement at the current location of Grantsburg had become a trade center for the surrounding frontier, boasting two sawmills, a shingle mill, a gristmill, a blacksmith shop, a saloon, two churches, and a school. In 1886, the settlement incorporated as a village with a population of 311 people (18).

Despite St. Paul’s economic influence, the policies and politics of Wisconsin’s state capital guided many forms of development in the area. After the fertile lands in southern Wisconsin were occupied, the railroad companies, timber men, and political leaders began intensely promoting the agricultural potential of cutover lands in northern Wisconsin to Northern European immigrants. From 1880 to 1920, a small number of farmers moved into the area, lured by cheap land and promises of a bright future. Intense pressure from the state legislature and the Dean of Agriculture at the University of Wisconsin fanned the migration. Upon direction from the legislature, Dean William A. Henry produced the highly illustrated, 200-page Northern Wisconsin: A Hand-Book for the Homeseeker in 1895. About 50,000 copies of the full report were published, and 60,000 copies of a highly illustrated abridged version were published in English, German and Norwegian. The photos were probably contrived to show the best possible aspects of the region. Although the limitations are mentioned, the overwhelming tone is one of golden opportunities for the hard-working farmer.

*“If this Hand-Book shall be an instrument in removing the great ignorance and even prejudice which prevails in the southern half of our own state concerning the agricultural possibilities of northern Wisconsin,*

# FIELD VISITS

## Burnett Dairy

11:30 am - 12:00 pm

<https://www.burnettdairy.com/>

Burnett Dairy is a 200-dairy farmer-owned cooperative, which remains one of the last remaining full-service cooperatives producing cheese today. Founded in 1896, Burnett Dairy continually produces award-winning cheeses, recently including 2nd place in the 2016 World Dairy Expo Championship Dairy Product Contest and first place in the 2016 Wisconsin State Fair Cheese & Butter Contest. While Burnett Dairy was founded in the late nineteenth century, multiple creameries merged to begin a more profitable venture of creating cheese during the 1960s. It was at this time that the cooperative focused on Mozzarella in particular.

Administered by the Center for Dairy Research at the University of Wisconsin-Madison, the Burnett Dairy Cooperative hosts the Wisconsin Master Cheesemaker program. This program is the only one of its kind outside of Europe that provides the opportunity to reach the highest levels of cheese craft. Only certified Master Cheesemakers are eligible to use the Master's Mark on their products, which can be found on their multiple high quality cheeses, including Mozzarella, Colby, Monterey Jack, Fancy Jac, and Cheddar cheeses. The co-op remodeled its retail outline in 2016 and now provides a wide range of products to tourists and local residents.

*and if it shall convey to our people and those of other states and countries a true acknowledge [sic] of this region, much good will have been accomplished. . . . With farms supplanting the forest, northern Wisconsin will not revert to a wilderness with the passing of the lumbering industry, but will be occupied by a thrifty class of farmers whose well directed, intelligent efforts bring substantial, satisfactory returns from fields, flocks and herds.” (19)*

According to the authors, the great marshes of Burnett County and northern Wisconsin presented special opportunities for agricultural entrepreneurs. Rainfall amounts were low during the years prior to the pamphlet's publication, which prompted the writers to predict great changes in the marsh environment.

*“Many of these swamp lands have natural permanent and decided advantages over the higher lands which surround them. . . . when swamp lands have been adequately drained and where the organic matter is not too thick and is sufficiently decayed, they are far superior for many purposes to the higher and naturally drier lands. The superior value of these lands when once reclaimed grows out of the large supply of organic nitrogen in the soil and the natural system of sub-irrigation to which they are perennially subjected. The sub-irrigation has its advantages not simply in bringing an abundant supply of water but in bringing with that water and dissolved in it ready for the use of the plant, a large amount of plant food of the in-organic types which has wasted from the surrounding higher lands into their drainage waters, and which are steadily traveling towards outlets in the drains of the swamp areas.” (19)*

## Brickfield Brewing

12:15 pm

<http://brickfieldbrewing.com/>

This former creamery was converted to an office building and brewpub in 2018. Many breweries can claim they have a Grain to Glass concept, but Brickfield is unique. Gary & Cris Peterson, parents of Brickfield owner Ben Peterson, own Four Cubs Farm, a 700+-cow dairy farm a few miles outside of Grantsburg. They will grow their own grains for brewing and feed the spent grains back to their cows. In the coming years they plan to grow hops for special release beers.

## Four Cubs Farm

1:00 pm - 2:30 pm

<http://fourcubsfarm.com/>

The farm is a family-owned dairy farm located in north-west Wisconsin. The Peterson family has owned it since 1877 when it was homesteaded. Today, the farm milks over 700 cows in a double-16 parlor. The first barn and house were built in 1895 with lumber cut from the surrounding land. The owners, Gary and Cris Peterson, expanded their herd from 45 cows in 1998 to more than 700 in 2018. The greatly expanded and modified original barn burned in 2017 and has been replaced with an ultramodern system that uses robotic milking systems. The milk goes to the Burnett County Dairy Co-op.



Figure 4.6: Four Cubs Farm. (source: Holly Barcus)

Much of the marsh was acquired by the Baker Land and Title Company in 1880. In 1892, the Marshland Farming Company of Boston, Massachusetts, and Hudson, Wisconsin, began to acquire the marshland from Baker, and in 1893, that company owned about 12,000 acres of wet land known as the “Big Meadow.” The Company apparently intended to harvest both hay and cranberries from the area, and Marshland Township would become the most valuable property in the county. In 1899, a carriage-maker turned land developer from Iowa named L. C. Erbes bought out Marshland Farms. He continued to drain the lands and sold some of the property to small farmers. He began to sell large tracts of land to the Crex Carpet Company in 1911. By 1913, he sold essentially all of his holdings in the Big Meadow to Crex Carpet Company. The local paper reported that the company paid about \$450,000 for 20,000 acres. (20)



about 1890, when the hand operated cream separator and the Babcock Butterfat tester were put on the market. Thereafter, farmers could be paid according to the quality of their milk. (21)

## Cheese and Wisconsin

In the 1870s, leaders of the growing Wisconsin cheese industry organized several professional organizations to promote their product and to overcome farmer opposition to the cheese industry. The transition from wheat husbandman to herdsman had been difficult for many farmers, and the adjustment to the more regulated and confining routine of the factory supplier had proved especially trying. Among the most famous of the organizations was the Wisconsin Dairyman’s Association, founded in Wauwatertown in 1872. However, primarily a marketing association, the Dairyman’s Association also provided education in new dairying methods through its publications and meetings. In the 1880s, the University began offering agricultural “short courses” and “winter courses” in Madison to educate farmers on the benefits of dairying. Its Farmers’ Institutes, held around the state, also brought farmers and scientists together to share ideas. Finally, the German and Scandinavian immigrant families who were quick to adopt dairying as a profitable way to farm helped the dairy industry. They also specialized in the European-style cheeses that appealed to consumers, and Wisconsin became known for its Swiss cheese. By 1915, Wisconsin had become the leading dairy state in the nation, producing more butter and cheese than any other state (21).

The Census of Agriculture shows Wisconsin had 10,400 dairy farms in 2012, down from more than 13,000 five years earlier. The census considers a farm a dairy farm if its main business is producing milk. Other farms also have dairy cows, however. In 2012, about 1,500 farms that were not primarily dairy operations had some milking cows. On average, a dairy cow produces 6.7 gallons of milk per day or about 206 gallons per month.

## FIELD VISIT

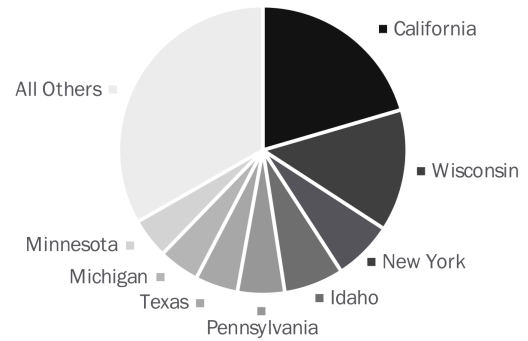
### Buffalo Viewing at Belwin Conservancy

7:00 pm

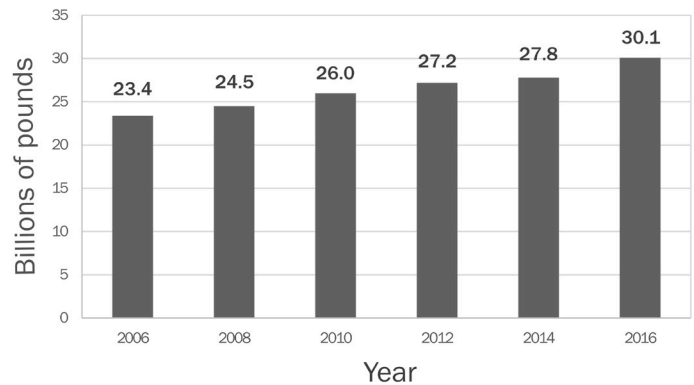
<http://www.belwin.org/>

Located in the St. Croix Valley just east of the Twin Cities and east of the St. Croix River, the Belwin Conservancy owns nearly 1,400 acres of preserved land in Afton and West Lakeland Township, Minnesota; this comprises one of the largest privately owned nature preserves in the region. The Belwin Conservancy maintains an aggressive restoration strategy. Prior to European settlement, there were millions of acres of prairie. Today, less than 0.1% of it remains, making the surviving tallgrass prairie the most endangered ecosystem on earth. Through the reintroduction of bison, the land offers a unique opportunity for visitors to see a living example of pre-European Minnesota that also serves as a model for modern land use that is economically sustainable.

## Top Milk-Producing States, 2013



## Wisconsin Milk Production, 2006-2016



## Wisconsin Cheese Production, 2006-2016

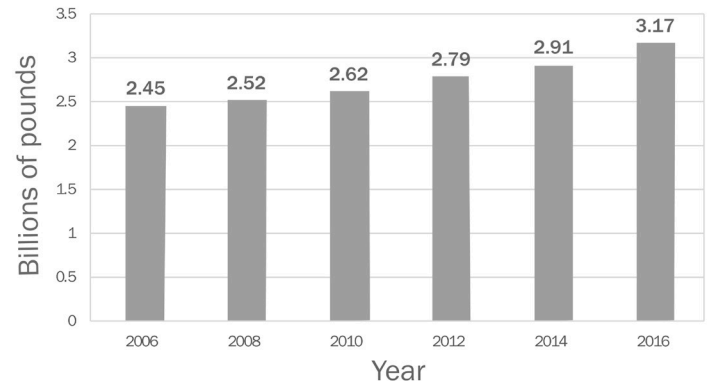


Figure 4.7: Wisconsin’s Prominence in the Dairy Industry.  
(source: National Agricultural Statistics Service, 2017)

# References

- (1) Carlton County, Minnesota. (n.d.) "Official Website." Retrieved from <http://www.co.carlton.mn.us/>
- (2) Nelson, P. (2015.) "Cloquet, Duluth, and Moose Lake Fires, 1918." *MNopedia*. Retrieved from <http://www.mnopedia.org/event/cloquet-duluth-and-moose-lake-fires-1918>
- (3) City of Cloquet. (n.d.) "Home." Retrieved from <https://cloquetmn.gov>
- (4) Cloquet Area Tourism Office. (2019.) "Community Profile." Retrieved from <https://www.visitcloquet.com/copy-of-cloquet-facts>
- (5) Fond du Lac Band of Lake Superior Chippewa. (2019.) "Fond du Lac Band of Lake Superior Chippewa." Retrieved from <http://www.fdlrez.com/>
- (6) Carlton Chamber of Commerce. (2019.) "About." Retrieved from <https://carltonchamber.com/about/>
- (7) Moose Lake Area Chamber of Commerce. (2019.) "Moose Lake Area Chamber of Commerce." Retrieved from <http://www.mooselakechamber.com/>
- (8) Pine County, MN. (2018.) "Welcome to Pine County, MN." Retrieved from <http://www.co.pine.mn.us/>
- (9) Snow, R.F. (August 1977.) "The Hinckley Fire." *American Heritage Magazine*, Vol. 28, Issue 5. Retrieved from [https://web.archive.org/web/20091214105059/http://www.americanheritage.com/articles/magazine/ah/1977/5/1977\\_5\\_90.shtml](https://web.archive.org/web/20091214105059/http://www.americanheritage.com/articles/magazine/ah/1977/5/1977_5_90.shtml).
- (10) Pine City, MN. (n.d.) "City of Pine City, MN." Retrieved from <https://pine-city.govoffice.com/>
- (11) Hosmer, B. & O'Neill, C. (2004). *Native Pathways: American Indian Culture and Economic Development in the Twentieth Century*. Boulder: University Press of Colorado. Retrieved June 25, 2019, from Project MUSE database.
- (12) Stevens, E.L. (December 10, 2002.) "National Indian Gaming Association Responds to Time Article." *Minnesota Indian Gaming Association*. Retrieved from [https://web.archive.org/web/20060530052033/http://www.mnindiagaming.com/template.cfm?view=news\\_detail&releaseID=32](https://web.archive.org/web/20060530052033/http://www.mnindiagaming.com/template.cfm?view=news_detail&releaseID=32).
- (13) Williams, G.W. (2005.) "The USDA Forest Service - The First Century." USDA Forest Service Office of Communication. Retrieved from [https://www.fs.fed.us/sites/default/files/media/2015/06/The\\_USDA\\_Forest\\_Service\\_The\\_FirstCentury.pdf](https://www.fs.fed.us/sites/default/files/media/2015/06/The_USDA_Forest_Service_The_FirstCentury.pdf)
- (14) The Ad Council. (2019.) "Home | Smokey Bear." Retrieved from <https://smokeybear.com/en>
- (15) Burnett County, WI. (n.d.) "Official Website." Retrieved from <http://www.burnettcounty.com/>
- (16) Village of Grantsburg. (n.d.) "Home." Retrieved from <http://www.grantsburgwi.com/>
- (17) CrexMeadows.Org. (2017.) "About Crex Meadows." <http://www.crexmeadows.org/about-crex-meadows>
- (18) Hickerson, Perry John Jr., and Jay Allen Hickerson, Eds. (1988.) *Hickerson Family History Marshall MN*: Henle's Speedy Print.
- (19) Henry, William. (1988.) *Northern Wisconsin: a Handbook for the Homeseeker*, Madison: University of Wisconsin Press.
- (20) Nelson, Paul D. (2008.) "The Greatest Single Industry?: Crex: Created Out of Nothing." *Ramsey County History Vol. 40* No. 4, pp 4-15.
- (21) Wisconsin Historical Society. (2019.) "Dairy Farming in Wisconsin: How Wisconsin Became the Dairy State." Retrieved from <https://www.wisconsinhistory.org/Records/Article/CS1744>

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