

Mapping Indian Land Tenure in Minnesota



A partnership between the Indian Land Tenure Foundation
and Macalester College Department of Geography

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EXECUTIVE SUMMARY

OVERVIEW

This study of the land tenure status on Minnesota Indian reservations was conducted by Macalester College students enrolled in two advanced GIS course, GIS: Concepts and Applications and Urban GIS, working with the Indian Land Tenure Foundation (ILTF) over a span of four months during the fall semester of 2010. Using data from a variety of sources, students composed maps for ten reservations scattered throughout Minnesota. These reservation maps are compiled into chapters associated with their reservation and are accompanied by group analysis and observations concerning the reservation areas studied. Each chapter includes the following sets of core maps and their corresponding analyses:

- Reference Maps
- Socio-demographic/economic maps: Median household income, population density, population by race, and poverty
- Land tenure maps: Trust land vs. non-trust land, multiple category land tenure

In each chapter, additional maps are also included that explore more individual, reservation-specific characteristics. These include, for example, land use, historical land loss and reacquisition and land values, among other, more specific variables. One of the main purposes of this body of work is to visualize the tenure status of the parcels of land within and surrounding Minnesota Indian reservations.

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CONCLUSIONS AND OBSERVATIONS

Though each reservation is unique, and results are variable across different groups, some general conclusions have been gathered in this study. The most significant results of this report show that:

- Much of the land within reservation boundaries – with the exception of the Shakopee Mdewakanton Sioux Community and the Upper Sioux and Lower Sioux Communities – is owned by non-Indian groups.
- The majority of Indian owned on reservations is held in trust status as opposed to fee status.
- The phenomenon known as “checkerboarding” is a significant problem on most reservations.
- Some parcels of tribal land suffer from fractionation, impeding owners’ abilities to develop their land.

- Generally, reservation areas suffer from higher rates of poverty and lower median household income levels than surrounding areas, although more recently the success of certain reservations' casinos has begun to change this.

LIMITATIONS

Various limitations confronted the research performed for this project. First, socio-economic and demographic data from the 2010 U.S. Census were not yet available at the time of the report's completion, meaning that less current data from the 2000 Census were used instead. Adding a current series of these maps once the data are available would be a relatively simple way to increase the relevance of these core maps, and would additionally add a contemporary change-over-time perspective to these analyses.

Additionally, the inconsistent availability of Indian land tenure data presented another challenge for this research. As part of the beginning of a larger effort to consolidate this type of information from its many disparate sources into a unified information base, we hope that maintaining and adding to the data collected for this report will facilitate future research on the subject of Indian land tenure.

FUTURE RESEARCH DIRECTIONS

There are several capacities in which this report could facilitate future research on the subject of Indian land tenure. Firstly, we hope that Minnesota tribes and the ILTF will find it beneficial to expand upon the data sets collected here. This would make it easier to create certain maps which were not included in this report. Specifically, more detailed ownership documentation would make it possible to create time-series land tenure maps similar to those presented in the Fond du Lac chapter for each reservation. This would more clearly communicate the history of Indian land loss throughout the state of Minnesota, as well as efforts to reacquire lands over time. Additionally, future research merging spatial analysis of land tenure with socio-economic data could help demonstrate the importance of Indian land ownership issues, and aid in identifying opportunities for land reacquisition.

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TERMS

Allotment Act: (Dawes Act) Passed in 1887, this act was designed to encourage individual land ownership by dividing reservation land into lots which were distributed to individual American Indians. Lands that were not allotted were often sold to non-American Indians, and this act resulted in massive land loss for tribes and individual American Indians (The Harvard Project on American Indian Economic Development 2008).

Allotted Land: Land distributed to individual Indians by the federal government. Allotted land was commonly held ownership that became individually owned (ILTF 2009).

American Indian: A person having origins in any of the original peoples of North, South, and Central America and who maintains tribal affiliation or community attachment (U.S. Census Bureau 2010).

Band: A subset of American Indian tribes which can be regionally specific. For example, the Mille Lacs Band and the Bois Forte Band are both part of the Minnesota Chippewa Tribe.

Block Group: “A unit of U.S. census geography that is a combination of census blocks. A block group is the smallest unit for which the U.S. Census Bureau reports a full range of demographic statistics. There are about 700 residents per block group. A block group is a subdivision of a census tract” (Wade and Sommer 2006, p20).

Buffer: “A zone around a map feature measured in units of distance. A buffer is useful for proximity analysis” (Wade and Sommer 2006, p22).

Bureau of Indian Affairs (BIA): A bureau of the Department of the Interior which provides services to American Indian and Native Alaskan populations. The BIA is responsible for managing American Indian land that is held in trust (U.S. Department of the Interior 2010).

Burke Act of 1906: An act passed in 1906 that authorizes the Secretary of the Interior to grant a patent in fee simple if s/he determined that an allottee was “competent” to manage his or her land. The Secretary of the Interior was also given the power to determine the legal heirs of a deceased Indian landowner (ILTF 2009).

Census Tract: “A small, statistical subdivision of a county that usually includes approximately 4,000 inhabitants but may include from 2,500 to 8,000 inhabitants. A census tract is designed to encompass a population with relatively uniform economic status, living conditions, and some demographic characteristics. Tract boundaries normally follow physical features but may also follow administrative boundaries or other nonphysical features. A census tract is a combination of census block groups” (Wade and Sommer 2006, p28).

Checkerboarding: Land within reservation boundaries may be in a variety of types of ownership, tribal, individual Indian, and non-Indian as well as a mix of trust and fee status. The pattern of mixed ownership resembles a checkerboard (ILTF 2009).

Choropleth Map: “A thematic map in which areas are distinctly colored or shaded to represent classed values of a particular phenomenon” (Wade and Sommer 2006, p30).

Digitize:” The process of converting the geographic features on an analog map into digital format using a digitizing tablet, or digitizer, which is connected to a computer” (Wade and Sommer 2006, p56).

Federal Trust Land: Indian-owned land, the title to which is held in trust and protected by the federal government. Indian people and tribes have use of the land, but the ultimate control over the land remains with the federal government. (ILTF 2002)

Fee Simple: Land for which the owner holds title and control of the property. The owner may make decisions about most common land use without government oversight (ILTF 2002)

Fractionation: A trust parcel owned by more than one owner as undivided interests. Fractionated land is a result of land ownership interests being divided again and again when an owner of the interest dies without a will providing for the distribution of the asset. (ILTF 2002)

Geocode: “A code representing the location of an object, such as an address, a census tract, a postal code, or x,y coordinates” (Wade and Sommer 2006, p84).

Geo-Referencing: “Aligning geographic data to a known coordinate system so it can be viewed, searched, and analyzed with other geographic data” (Wade and Sommer 2006, p89).

GIS: “Acronym for *geographic information systems*. An integrated collection of computer software and data used to view and manage information about geographic places, analyze spatial relationships, and model spatial processes. GIS provides a framework for gathering and organizing spatial data and related information so that it can be displayed and analyzed” (Wade and Sommer 2006, p90).

Indian Land Tenure Foundation (ILTF): The Indian Land Tenure Foundation (ILTF) is a community-based nonprofit organization focused on the recovery, management and control of American Indian lands by Indian people. (Indian Land Tenure Foundation 2010)

Joining: “Appending the fields of one table to those of another through a field common to both tables” (Wade and Sommer 2006, p115).

Land Cover: “The classification of land according to the vegetation or material that covers most of its surface; for example, pine forest, grassland, ice, water, or sand” (Wade and Sommer 2006).

Land Use: “The classification of land according to what activities take place on it or how humans occupy it; for example, agricultural, industrial, residential, urban, rural, or commercial” (Wade and Sommer 2006, p120).

Median Income: The median income divides the income distribution into two equal groups, one having incomes above the median, and other having incomes below the median. (U.S. Census Bureau 2010)

Off-Reservation Trust Land: Land that is protected by the federal government for Indian use. After reservations were created, some tribes and individual Indians were given land to use outside of the reservation boundaries. (ILTF 2002)

Parcel: A tract or plot of land (Merriam-Webster 2010)

Platt maps: A map dividing a parcel of land into lots, as in a subdivision. (Babylon 2007)

Poverty: If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being "below the poverty level." In 2000 the poverty line for a four-person family was \$17,050. (U.S. Census Bureau, 2010)

Proportional Symbols: “A symbol whose size differs in relation to the phenomenon being mapped” (Wade and Sommer 2006, p169).

Public Land Survey: The Public Land Survey System (PLSS) is a way of subdividing and describing land in the United States (National Atlas 2010).

Query: “A request to select features or records from a database” (Wade and Sommer 2006, p172).

Range: See Township.

Reservation: An area of land reserved for the use of American Indians. A reservation can be created through treaty, congressional legislation or executive order (Minnesota Senate 2010).

Shapefile: “A vector data storage format for storing the location, shape, and attributes of geographic features. A shapefile is stored in a set of related files” (Wade and Sommer 2006, p191).

Tenure: The act, right, manner, or term of holding something as a landed property (Merriam-Webster 2010).

Township: A division of land created by government surveyors which is typically six miles on a side and form a grid following parallels and meridians. Rows of these quadrilaterals are called **townships** while columns are called **ranges** (Kimmerling et al. 2009).

Treaty: Legal agreements made between two or more sovereign nations. American Indians and the U.S. government signed 371 treaties from 1777 to 1871 over land allocation and

use. These treaties were made when American Indians relinquished much of their land to the federal government (Minnesota Senate 2010).

Tribal Trust Land: Communal reservation land held in trust for a tribe by the U.S. government, which holds the legal title. The tribes control the use of this land through their governing body. This is distinct from the tribal fee land, where the band or community itself holds the legal title (Minnesota Senate 2010).

Tribally Owned Lands: Land that is owned by a group of Indians recognized by the federal government as an Indian tribe (ILTF 2002).

Tribe: A federally recognized tribe has a special legal relationship with the U.S. government. These are often based on ethnological tribes which are groups of "people bound together by blood ties who were socially, politically, and religiously organized, who lived together in a defined territory and who spoke a common language or dialect"(Minnesota Senate 2010).

INTRODUCTION

This report is the result of a partnership between the Indian Land Tenure Foundation (ILTF) and two advanced Geographic Information Systems (GIS) classes at Macalester College. The objective of the project is to create a resource to aid in visualizing the various issues surrounding Indian land tenure in Minnesota. Goals of the project include reinforcing connections between the ILTF and the tribes, between the tribes and the various counties with which they interact, and between the ILTF and Macalester College. This project aims to increase the tribes' ability to participate in the process of analyzing land tenure by creating a resource that is interactive and can be updated.

GIS is a tool used for the management, analysis, and representation of spatial data. In the context of land tenure, GIS can be used to visually represent the spatial patterns of land tenure from a modern or historical perspective. GIS can be further used to visually represent other social indicators on the reservations that may interact with issues of land tenure. The visual representation of data is a powerful tool as it allows viewers to see spatial patterns and connections that are not evident in other forms. It is also an excellent way to represent change over time. The students involved in this project are members of either the GIS: Concepts and Applications or the Urban GIS classes at Macalester College. The students used the ArcGIS software from ESRI to manage the data represented in the following maps. They were assisted by Professors Holly Barcus, Birgit Muehlenhaus, and Laura Smith.

The project came about through a request from the ILTF to create a series of maps detailing land tenure on the American Indian reservations in Minnesota. The ILTF is a community-based nonprofit organization with the goal of supporting tribes in the reacquisition and management of tribal land. A group of tribal leaders and other people associated with Indian land tenure created the ILTF in 1990 as a response to the myriad issues surrounding historically and currently held Indian land. The mission of the ILTF is to place all land within original reservation boundaries under American Indian control. They carry out this goal by supporting community-based projects that incorporate the following strategies: education, cultural awareness, economic opportunity, and legal reform (Indian Land Tenure Foundation).

The resulting project is a visual representation of land tenure on the American Indian reservations in Minnesota. The main goal of the project is to visually represent current land tenure on reservations and to illustrate the patterns and issues connected to land tenure. The beginning stages of the project involved extensive research into the history and complexities of land tenure. Research included visits to several of the reservations. Students then began, with the help of the ILTF, to formulate the objectives and design of the project. Students collected and managed data so it could be used in a GIS format. The result

is a series of maps and an accompanying written report that offer a snapshot of land tenure on American Indian Reservations, as well as other points of interest.

Mapping current land tenure displays a contemporary snapshot of a long history of land loss and alienation associated with colonization and the creation of the United States of America. Indigenous people have lived on and maintained over 2.3 billion acres of land, an area encompassing what is now designated as the United States of America, for many thousands of years. They represent many distinct cultural, linguistic, and spiritual traditions, but are linked by similar beliefs in collective ownership and shared resources. When European colonizers arrived they brought with them competing and conflicting ideas of individual ownership of land as a transferrable and exploitable resource for economic gain. From the point of contact forward, the European settlers imposed their system of ownership and resource management on indigenous peoples through a variety of treaties, governmental policies, and warfare. As a result, the indigenous land base has been drastically reduced, to such a point that many contemporary American Indians are alienated from their homelands.

In Minnesota the Dakota and Ojibwe both maintain long histories and deep connections to the land. Minnesota is the homeland of the Dakota people, who were created at the juncture of the Minnesota and Mississippi Rivers (Wazyatawin, 2008). The Ojibwe people, the largest indigenous tribe in North America, originated in the Great Lakes region and migrated into Minnesota prior to European settlement (Ebbott, 1985). Though land was often contested between the two tribes, they each had established territories with important cultural and spiritual meanings and practices essential to their livelihood (Indian Land Tenure Foundation, 2002). Minnesota quickly became a site of white settlement, resource extraction, and colonization. Both the Dakota and Ojibwe experienced land alienation as a result.

In the early period of European colonization and settlement, governmental powers established treaties with indigenous communities on a nation-to-nation basis. These treaties were the first step in the process of land loss for indigenous peoples, as they designated areas for white settlement and began limiting indigenous access to portions of their homeland (Indian Land Tenure Foundation, 2009). In 1788 the United States Constitution established the federal government as the entity responsible for entering into agreements and treaties with American Indian nations as equal sovereign powers. In Minnesota, treaties in the mid-to-late 1800s created early reservation boundaries, limiting the land base of the Dakota and Ojibwe peoples. Treaties with the Ojibwe created seven reservations in central and northern Minnesota: Bois Forte, Fond du Lac, Grand Portage, Leech Lake, Mille Lacs, White Earth, and Red Lake. These treaties did not negate hunting, fishing, and gathering rights outside of reservations. A treaty in 1851 established a Dakota reservation along the western portion of the Minnesota River in exchange for resources provided by the federal government. Further land loss and refusal by the government to uphold its treaty obligations led to the U.S.-Dakota War of 1862, which resulted in the nation's largest mass hanging and the eviction of the Dakota from the state of Minnesota. Some Dakota remained in the state and more returned in the following decades, eventually establishing four reservations: Upper Sioux, Lower Sioux, Shakopee Mdewakanton, and

Prairie Island (Ebbott and Rosenblatt). Reservation boundaries remain the jurisdictional and legal distinctions between indigenous and non-indigenous land.

In 1871, Congress officially abolished the practice of treaty-making with American Indian nations, no longer acknowledging their status as independent nations. The federal decision to move the Department of Indian Affairs from the Department of War to the Department of the Interior and several court cases defined indigenous communities as “domestic dependent nations” to a paternalistic federal government. This change brought about the assimilation era, marked by policies aimed at the integration of indigenous peoples into the dominant white society of individual land ownership and capitalist economic activity. The most significant policy of this era was the 1887 General Allotment Act (Nelson Act of 1889 in Minnesota), which divided reservation lands into 40 to 160-acre parcels designated for individual American Indian ownership. Following the era’s paternalistic logic, title to the land would be held in trust by the federal government for the American Indian owners, who were assumed to be incapable of managing their own lands. In theory, the federal government would manage the land for the benefit of the individuals while they began the process of assimilation. This relationship was meant to last 25 years but was later extended indefinitely. Any land deemed “surplus” after the allotment process was made available for sale to non-indigenous interests. An estimated 60-million acres, often rich in natural resources, were lost through this process. Additionally, the 1906 Burke Act expedited the process of transitioning the land from trust to individual, private ownership in many cases. Together, these policies resulted in the loss of over 90 million acres of land to non-indigenous interests (Indian Land Tenure Foundation, 2009).

The process of allotment and transfer of reservation lands into non-indigenous ownership also created patterns of checkerboarding and fractionation. Checkerboarding refers to mixed ownership patterns where reservations are divided into non-contiguous portions of tribal, individual, and governmentally-owned lands. Fractionation refers to the continued division of interest in parcels of land originally allotted but never transferred out of trust status, meaning any one parcel in a reservation could be held in trust for hundreds or even thousands of heirs. Both patterns create jurisdictional dilemmas, limiting tribal ability to maximize economic and cultural uses of the land.

Successive eras of federal policy have attempted to address these issues, but have often resulted in further land alienation or failed to facilitate reacquisition and reunification of indigenous land bases (Deloria and Wilkins, 2009). However, tribes are using these pieces of legislation and other modes of change to prevent further land alienation and re-establish contiguous land bases. The Indian Land Tenure Foundation is one organization facilitating and coordinating these efforts.

The following report uses maps to visualize the patterns created by these federal policies and historical interactions between indigenous nations and governmental powers in Minnesota. The project studied ten of the eleven American Indian reservations in Minnesota. Those included are the Shakopee Mdewakanton Sioux Reservation, the Prairie Island Reservation, the Upper Sioux and Lower Sioux Reservations, the Mille Lacs Reservation, the Leech Lake Reservation, the White Earth Reservation, the Bois Forte

Reservation, the Grand Portage Reservation, and the Fond du Lac Reservation. Not included is the Red Lake Reservation; this reservation was not included due to its unique land tenure history within the state and current complex set of issues surrounding land tenure within the reservation. Although the ten reservations included do not have identical land tenure histories, all are affected by similar legislation and issues.

Each chapter of the report focuses on one reservation and includes a brief history focusing on land tenure. Each chapter includes a reference map of the reservation, a map of lands currently in trust, as well as maps showing population density, race, median family income, and poverty using data from the 2000 Census. Also included are maps representing issues specific to the reservation; these range from maps showing change over time to maps detailing suggested lands for reacquisition by the tribe. The end of each chapter details the most important trends and patterns visible in the maps and suggestions for future research. Land tenure data come from various tribal land offices, county assessor offices, county plat books, and county GIS offices. Data for other maps comes from a variety of sources, a full list of which is included at the end of the report. Land tenure on American Indian reservations is a complex subject that cannot be fully represented in a single report. Our hope is that this series of maps and accompanying analyses can serve as a resource to the featured tribes and can aid in their further reacquisition of land and economic development.

1

SHAKOPEE MDEWAKANTON SIOUX COMMUNITY

The Shakopee Mdewakanton Sioux Community (SMSC), located 25 miles southwest of Minneapolis, continues the presence of the Mdewakanton band of the Dakota American Indians in Southeastern Minnesota, where they have lived for centuries and which they consider their homeland. Tribal members descended directly from the Mdewakanton Dakota people who historically resided in the lower Minnesota River valley. The tribe and town of Shakopee were named after Chief Sakpe (pronounced Shock-pay), which means the number six in the Dakota language. In 1805, treaties began to take away the rights and lands of the Dakota nation. After the 1862 conflict between the US and the Dakota, the tribal members were banished from the state. However, two hundred “friendly” Mdewakanton Dakota who had not participated in the revolts were permitted to stay, but remained homeless for many years. In 1886, Congress authorized the purchase of lands for these individuals who later became the Shakopee Mdewakanton Sioux, Prairie Island Indian Community, and Lower Sioux Indian communities. Two hundred and fifty-eight acres were acquired by the Federal Government for the Shakopee Mdewakanton Dakotas. However, settlement did not begin on the Shakopee land until the 1950s. (Ebbot 1985; Minnesota Indian Affairs 2010).

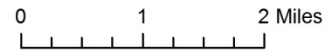
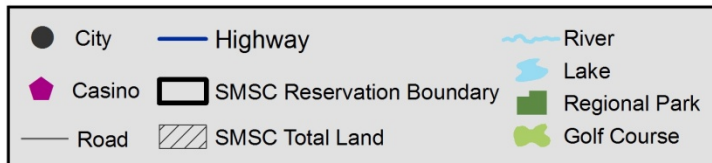
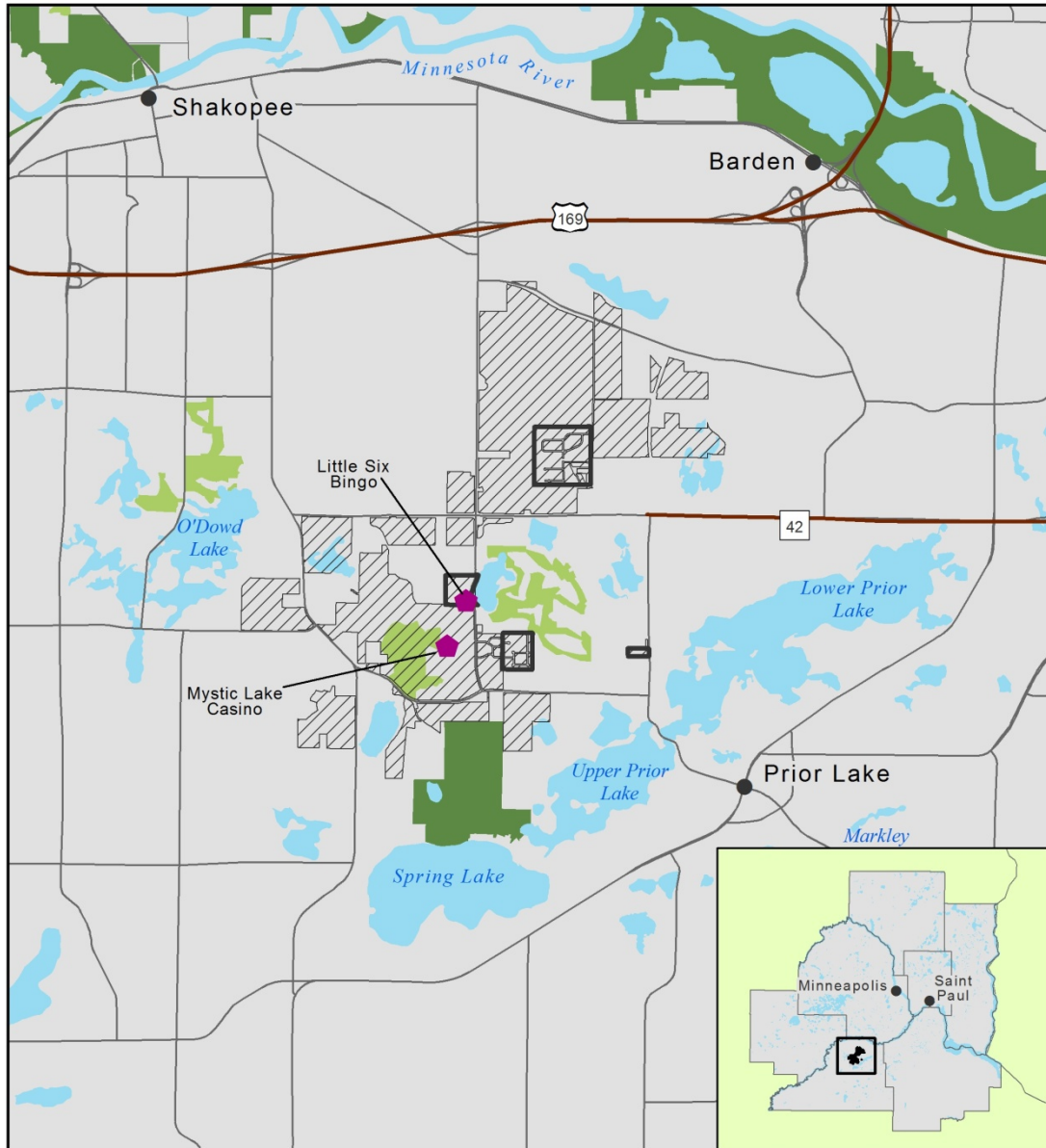
In 1969, the SMSC was finally given federal recognition. Like many other American Indian tribes, the Shakopee Mdewakanton Dakota Community was very poor for an extended time. Tribal members struggled with inadequate housing and low-paying jobs, survived on food subsidies, and had access to minimal public services. However, in 1982, the community constructed their first gaming center, Little Six Bingo. The profits from Little Six were put towards a day care center, health clinic, and cultural center. Tribal government services and job opportunities continued to grow. In 1992 Mystic Lake Casino was constructed and has become one of the largest and most successful American Indian gaming operations in the country. SMSC is now one of the most economically successful tribes in the country, enhancing their own community and others with donations and

grants of more than \$162.5 million over the past twelve years. (MN Indian Affairs 2010, SMSC 2009)

SMSC has also used their bolstered economy to acquire additional land. On this land they have constructed the Dakotah! Sports and Fitness Center, a gas station, RV Park, the Dakota Mall, the new Tiowakan Spiritual Center and Community Cemetery, and a championship golf course. They also offer medical services such as a pharmacy, a wellness clinic, and their own fire department and ambulance services. There have been numerous “green” infrastructure improvements on many of the existing and new tribally owned buildings. Their enterprises provide many employment opportunities for both Indian and non-Indian people. SMSC is the largest employer in Scott County, with more than 4,117 employees and a \$143.7 million payroll. (SMSC 2010).

Figure 1.1: Shakopee Mdewakanton Sioux Community Reference Map

SMSC Reservation



Cartographers: Lillian Gordon-Koven,
Nolan Levenson, Joe Rasmussen
Geography 364-365 Course, Macalester College, Fall 2010
Data Sources: US Census 2000, ESRI

CORE MAPS

DENSITY

The SMSC reservation is located in a relatively low-density portion of the Twin Cities metro area, between the outer-ring suburbs of Shakopee and Prior Lake. In 2000, all of the Census block groups containing SMSC land were in the lowest category of population density on our map, at 18 to 500 people per square mile. The suburban towns of Shakopee and Prior Lake were the densest settlement in the region surrounding SMSC, with block groups reaching close to 7,000 people per square mile in Shakopee, and between 1,500 and 4,000 people per square mile along the lakes.

Presently the region has become much more densely settled, especially on, and directly near, SMSC lands. As of 2010, all of the SMSC lands, except for one small piece, are located in block groups with densities between 500-1500 people per square mile. Shakopee has not increased much in density, but Spring Lake and Prior Lake have, so that both are now mostly settled at 1,500 – 4,000 people per square mile.

The increasing density is most likely a result of the expanding population of the Twin Cities metro region. SMSC is on the outer edge of the Twin Cities' southwestern suburbs, the most rapidly expanding part of the metro area. As such the area is likely to see continued growth of population in future years. This has significant consequences for the community, with potential for positive or harmful outcomes. The expansion of the metro region will likely bring increasing land values to the region. Obviously this is good for the land the tribe already own, but could make future land acquisition more difficult and expensive. This is also one of the core reasons of why the tribe has struggled to have some of their recently acquired land placed in trust, as Scott County is concerned about the loss of property tax revenue on what will be increasingly valuable land for development.

Figure 1.2: Population Density, 2000

Population Density - 2000

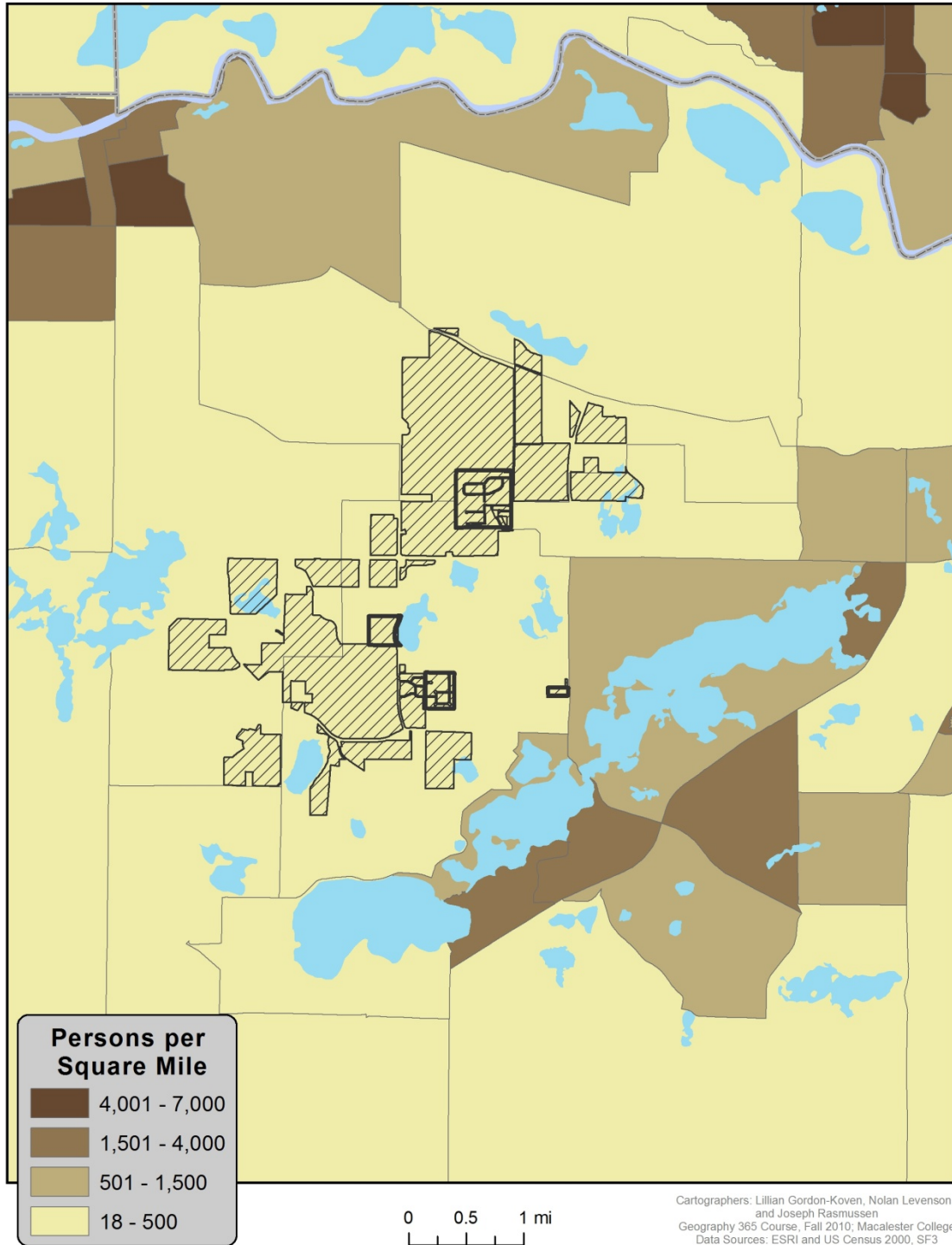
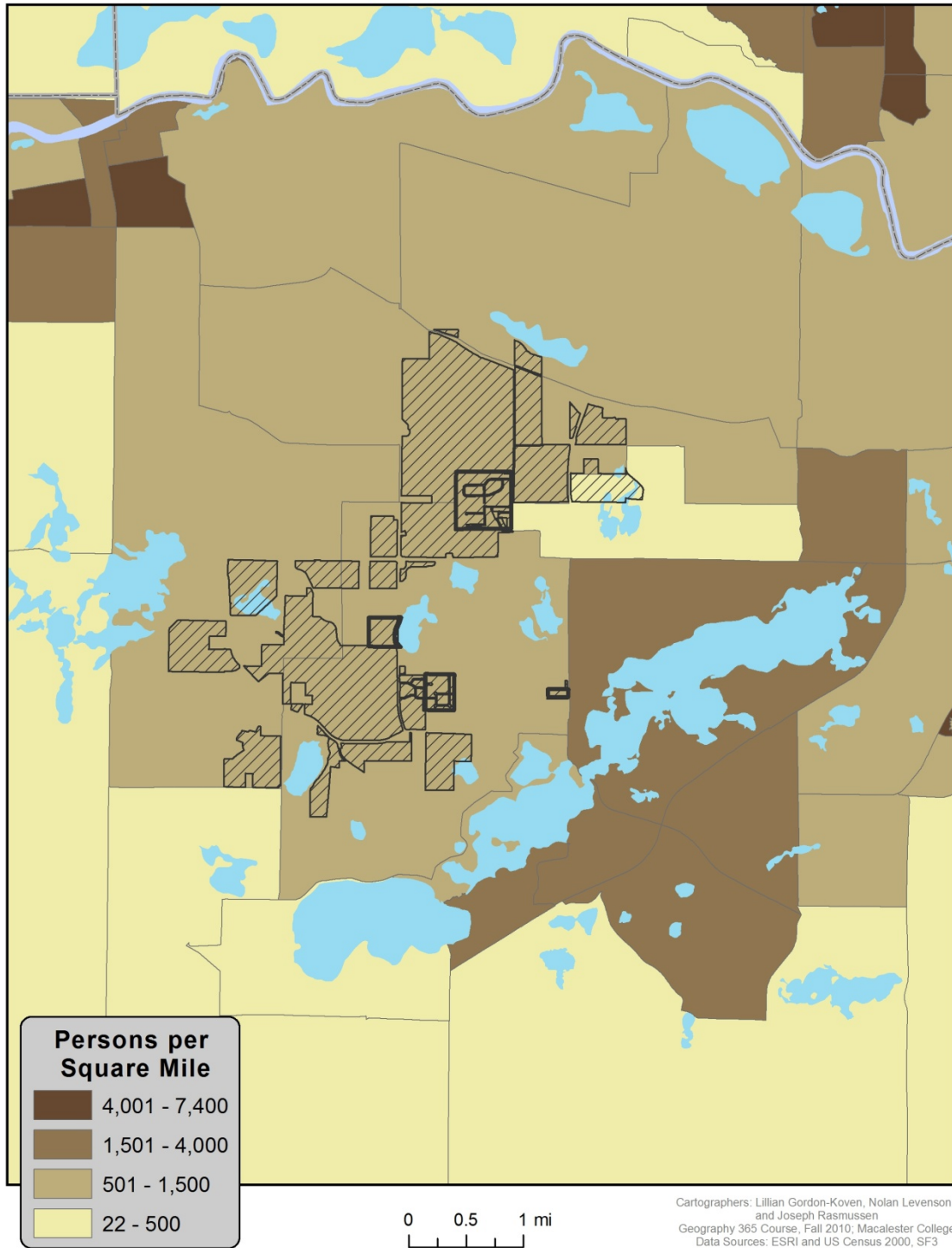


Figure 1.3: Population Density 2010

Population Density - 2010



POVERTY

Figure 1.4 shows the percent of the population under the poverty line on SMSC owned lands and surrounding area in the year 2000. The map is designed to show how the block groups in this area compare to the Minnesota average percent of population under the poverty line. The state poverty level is 7.9 percent and only four block groups in the area have rates that exceed the state average. Every block group in the immediate area of the SMSC tribal land is below the state poverty rate, reflecting the relative wealth of the area. Two block groups located in the Shakopee downtown have poverty rates higher than the state average, but are between 8 and 12 percent. The other two block groups with poverty rates above the state average (one to the west, one to the east) are around 8 percent poverty, so are closer to the average than the map may indicate given the breaks in categories.

Overall, there are low poverty rates within and around the tribal lands area, in Shakopee, and in Prior Lake. A large area to the direct north, the southwest, and south of the tribal lands are below 3.9 percent poverty. Given the wealth of SMSC, it is interesting that the block with the most tribal lands is not in the lowest category. However it is possible that the non-tribal lands around SMSC lands contain a less wealthy population, perhaps including some of the area's agricultural and undeveloped lands.

Figure 1.4: Percent Below Poverty, 2000

Percent Below Poverty - 2000

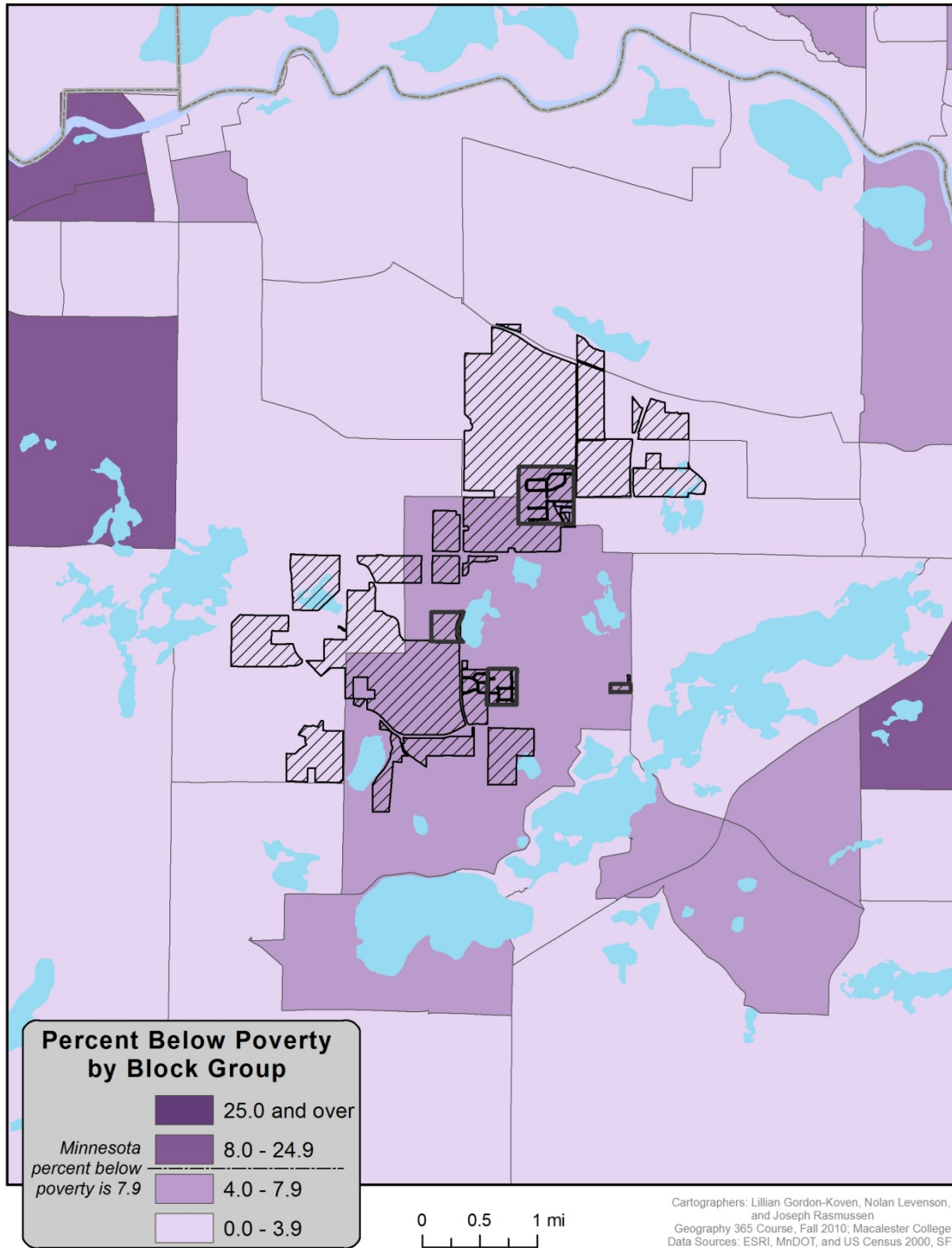
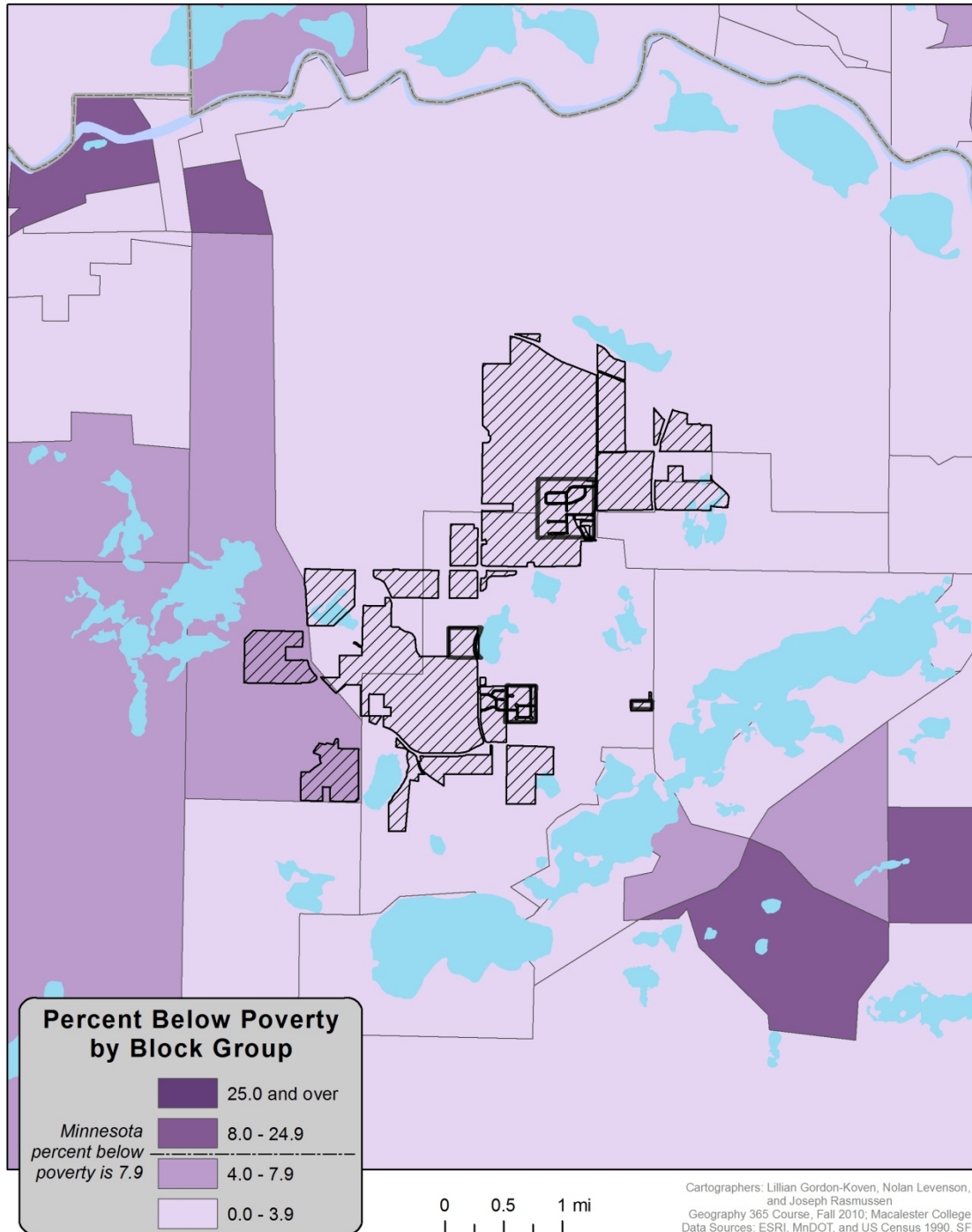


Figure 1.5 shows poverty status in 1990. This map, in comparison to Figure 1.4, may show the effects of Mystic Lake Casino, which was constructed in 1992. Interestingly, there appears to be an increase in poverty rates over the ten years. Given the economic successes of the casino, this is surprising. Much of the tribally owned lands increased from 0 – 3.9 percent poverty to 4.0 – 7.9 percent poverty. The rest of the area stayed relatively similar, except for some of the western block groups in the more agricultural areas. The increase in poverty might be explained by suburbanization to the southwest of Minneapolis during the 1990s, and an increase of non-Indian population moving into the general area of the tribe. These residents may have lower paying jobs, such as service work in the casino or other businesses in Shakopee.

Figure 1.5: Percent Below Poverty, 1990

Percent Below Poverty – 1990



MEDIAN HOUSEHOLD INCOME

Figure 1.6 illustrates the 1999 median household income for the SMSC owned lands and surrounding area. The map is designed to highlight areas where median household income exceeds the state median of \$47,111. The results for this area are quite striking given that nearly all block groups shown had median household incomes above the state level. As the legend describes, the darkest green shown represents block groups with a median household income of \$47,111 to \$132,690, a broad range. The only block groups under the Minnesota median household income in 1999 were those in downtown Shakopee. It may be of interest to compare this map with the parallel maps in other chapters of this report.

While Figure 1.6 may serve as a good comparison tool, Figure 1.7 shows the same 1999 median household income data displayed in a way that shows differences within the area. This map shows that the wealthiest block groups in the SMSC area are located north of the Minnesota River, including the affluent suburb of Eden Prairie. The tribal owned lands fall in the upper middle category range of \$67,751 - \$82,785. These block groups represent a mixture of Indian and non-Indian households. The block groups around Spring Lake and Prior Lake also have substantially higher median household incomes, varying between \$82,786 - \$132,690, and aided by the lakeshore amenities. The divide between suburban development and agricultural land exists just west of the tribal lands. Despite the variation within the area shown in the first map, the area still is wealthier than most other areas of the state, which can be attributed to the wealthy suburban population of the Twin Cities and presence of SMSC's casinos.

Figure 1.6: Median Household Income, 1999

Median Household Income - 1999

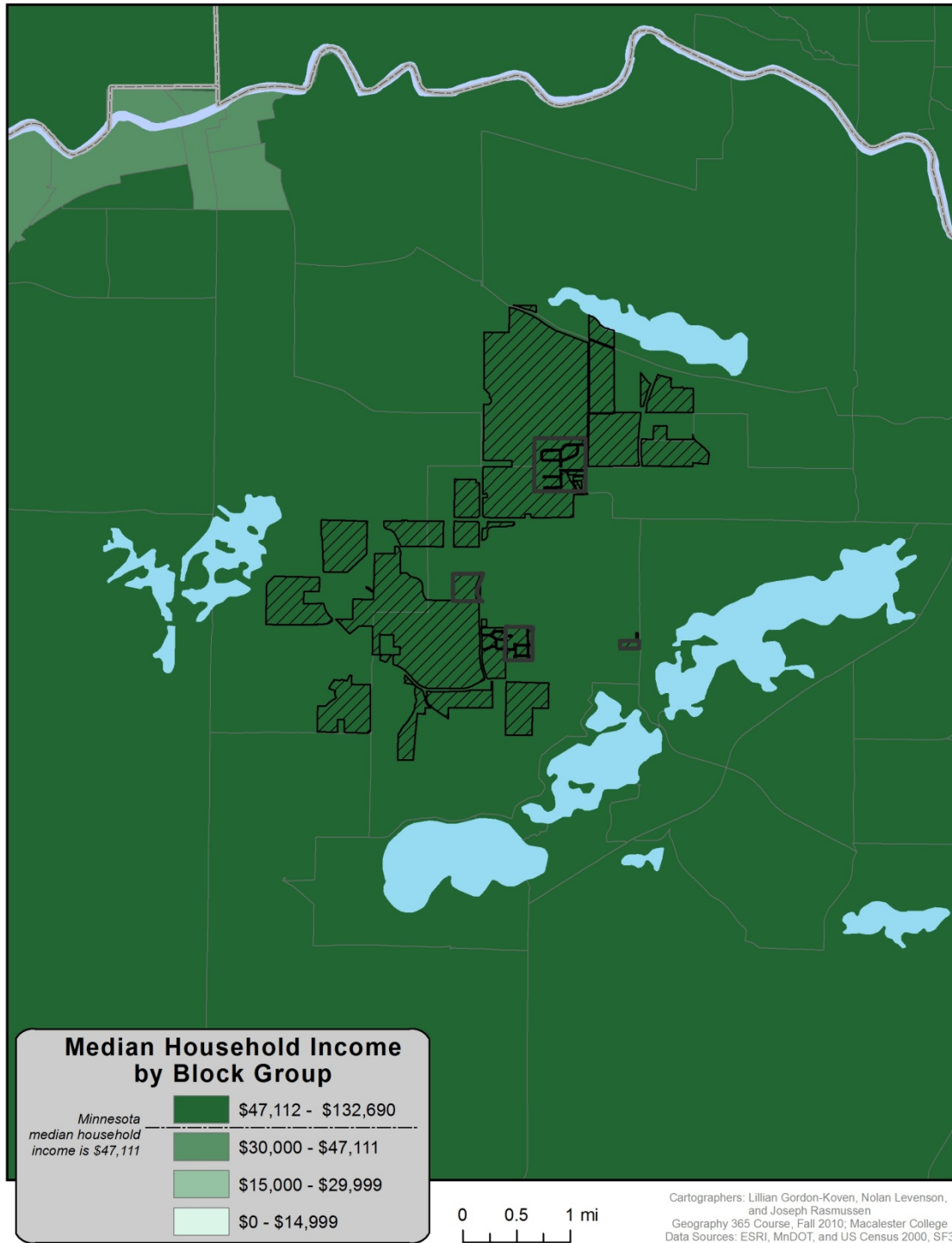
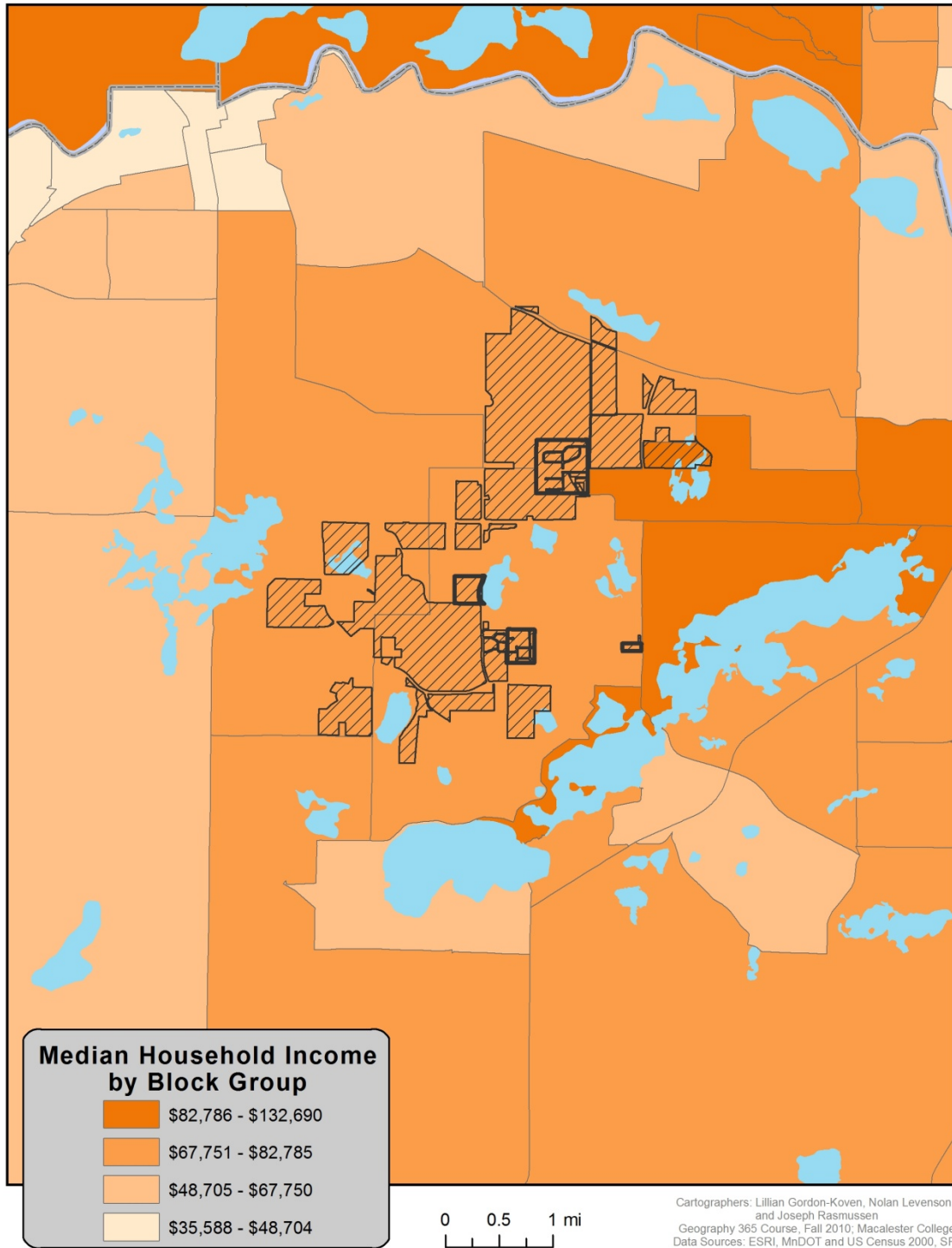


Figure 1.7: Median Household Income, 1999

Median Household Income - 1999



Figures 1.8 and 1.9 show median household income ten years earlier, in 1989. These maps may show the effects of Mystic Lake Casino, which was constructed in 1992. Figure 1.8, does not differ much from Map 1.6 in 1999 because most block groups are above the state median household income. However, Map 1.9 clearly highlights the increase in wealth on and around the tribal lands. Almost all of the block groups with tribally owned land increased from the \$47,705 - \$67,750 to the \$67,751 - \$82,785 category group. Much of the area around the tribal land increased similarly, especially around the lakes. As stated in the introduction, Mystic Lake revenues allowed for more economic development and employment opportunities around the reservation areas. In addition, general suburbanization boom trends of the 1990s to the southwest of Minneapolis may also help explain the increases in income in this area.

Figure 1.8: Median Household Income, 1989

Median Household Income - 1989

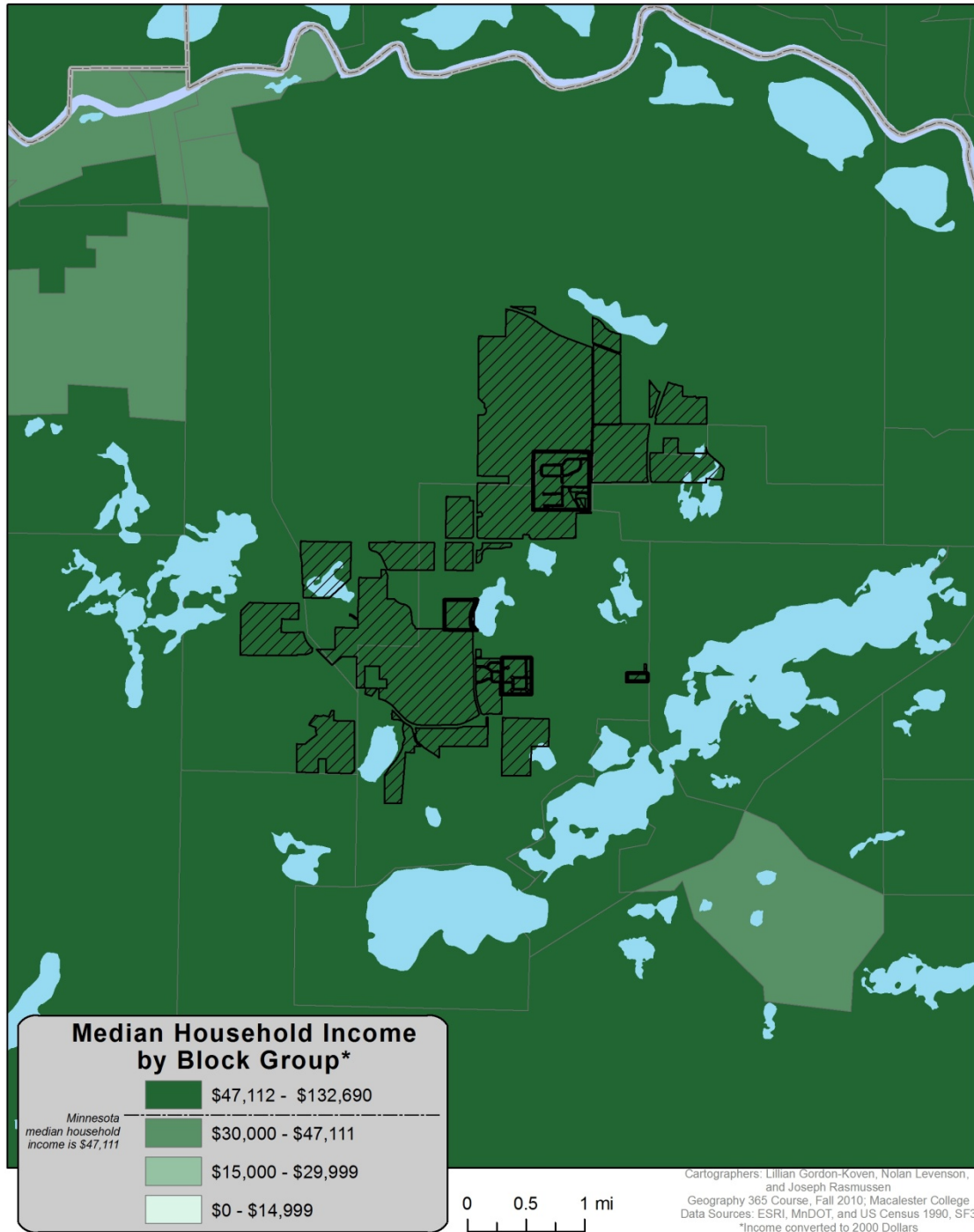
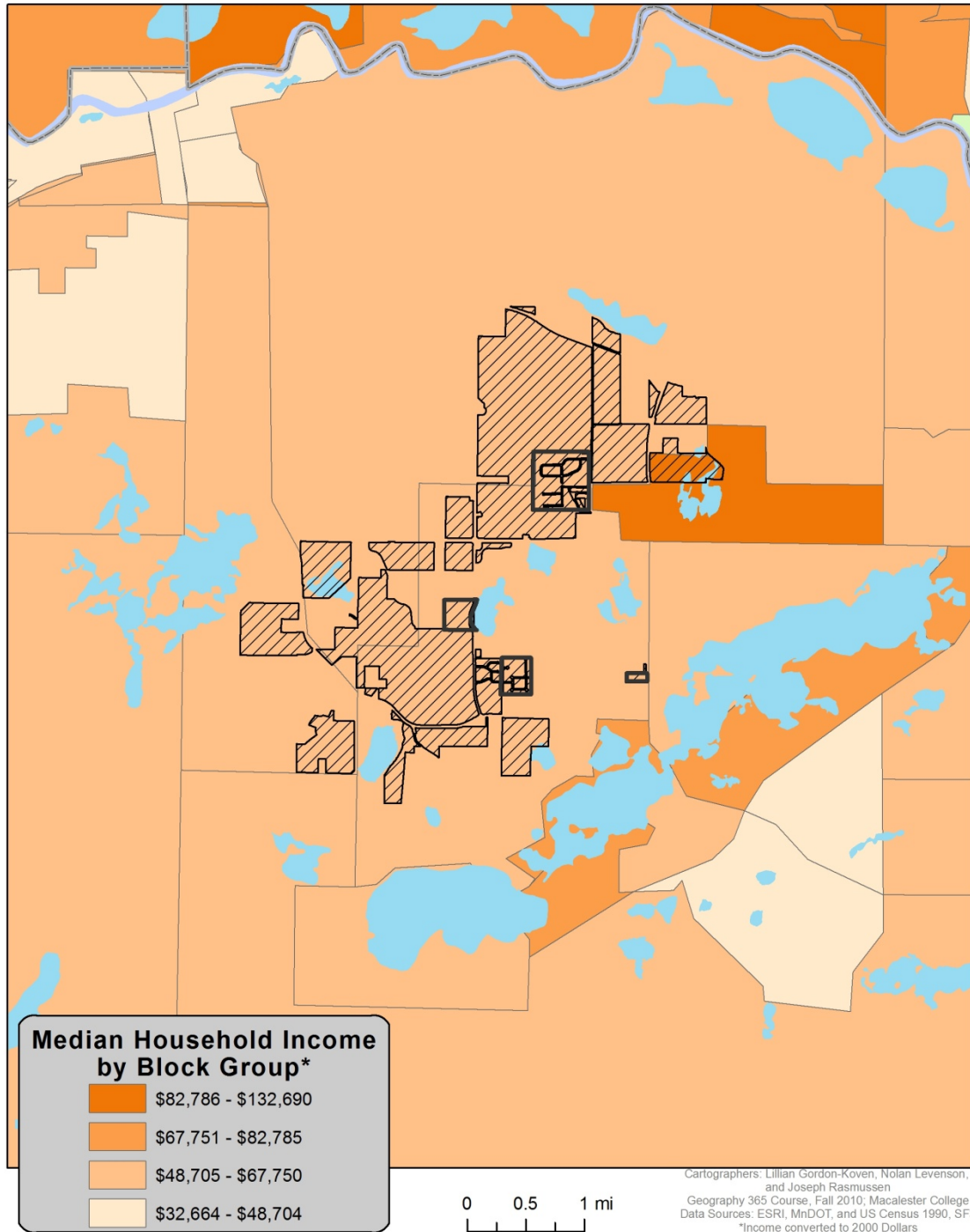


Figure 1.9: Median Household Income, 1989

Median Household Income - 1989

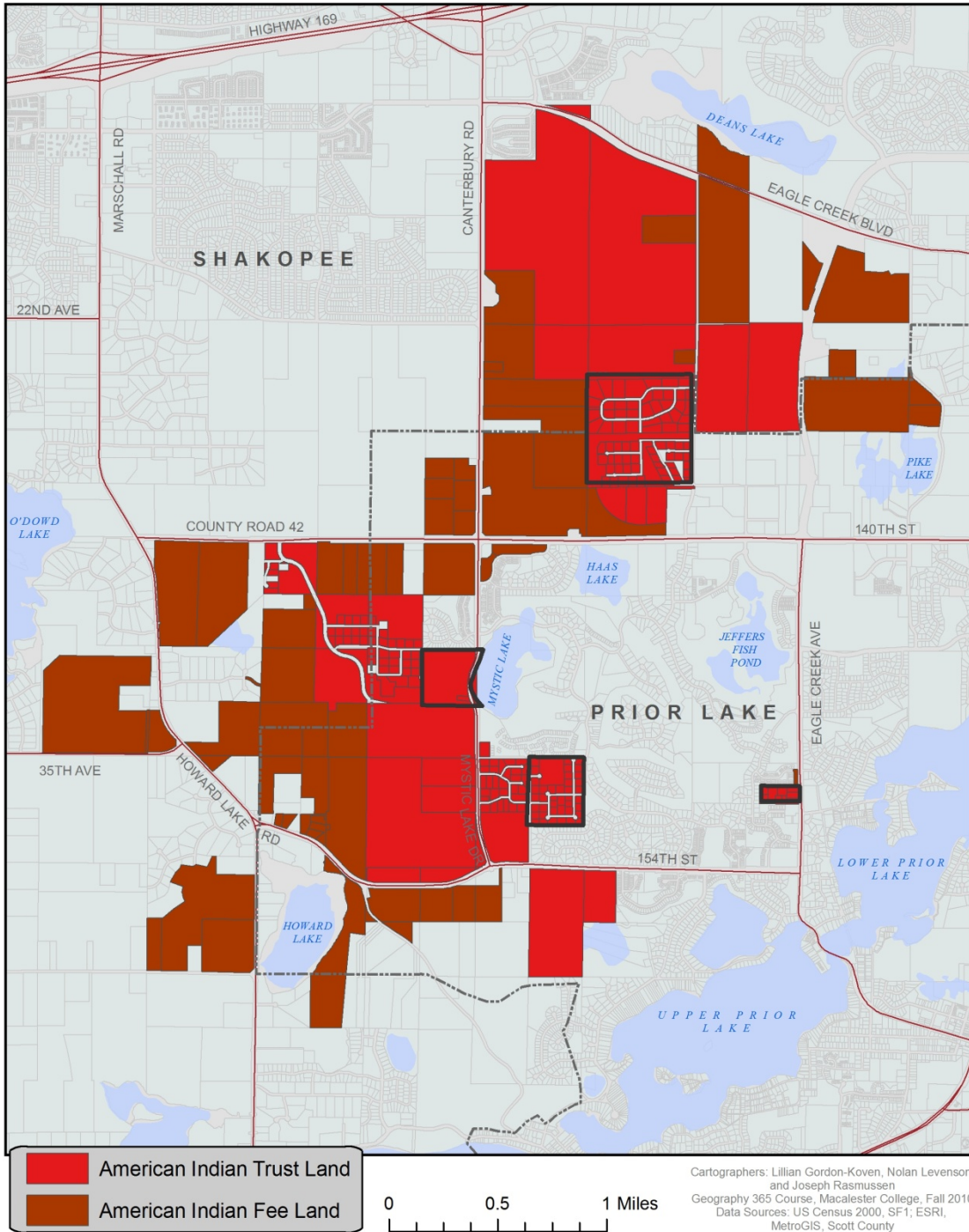


LAND TENURE

Figure 1.10 shows all of the SMSC Tribal lands. The red color indicates the land in trust and the maroon color indicates land owned by the tribe that is not in trust. As mentioned before, due to the economic successes of SMSC, the tribe has been able to acquire a considerable amount of land outside the reservation boundaries. This is quite apparent in the map, given that about half of the tribe's land is not in trust. There are now 3,361 acres of tribal land, 1,606 of which are in trust, all within or near the original 250-acre reservation (SMSC 2010). Trust land is almost entirely contiguous to the original reservation boundaries. Land owned by the tribe that is not in trust is primarily agricultural or undeveloped land. Attempts to place more of the land in trust have been thwarted by opposition from local municipalities. The existence and location of fee land owned by individual tribal members is not public information.

Figure 1.10: Land Tenure, SMSC

Land Tenure - SMSC

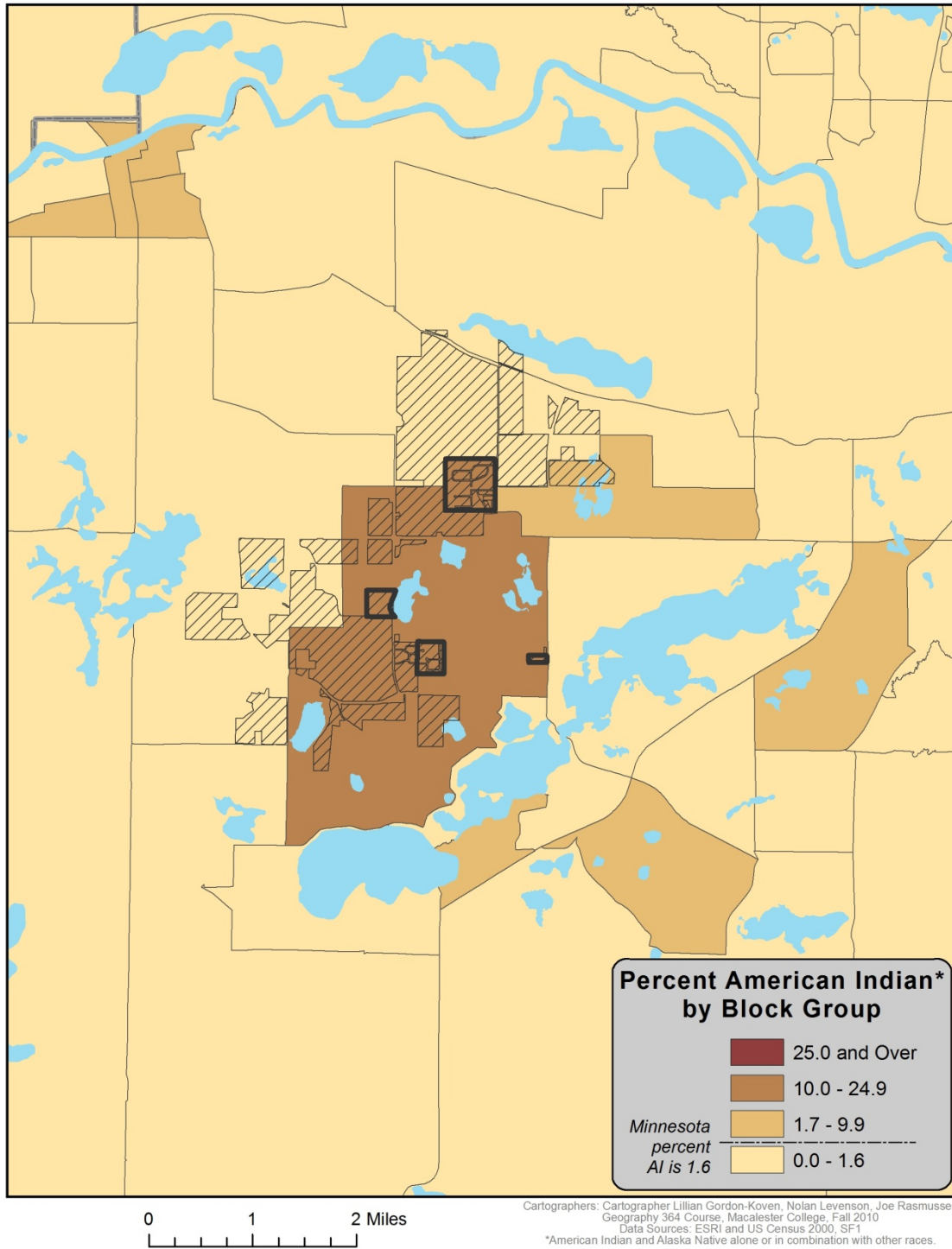


RACE

Figure 1.11 shows the presence of American Indian population in the SMSC reservation, tribally owned lands, and surrounding area. The map includes individuals who identify as American Indian or Alaska Native alone or in combination with other races. The American Indian population makes up 1.6 percent of Minnesota's total population, and our map highlights areas that have populations higher than 1.6 percent in darker colors. With 21.3 percent American Indian, the block group encompassing all parts of the current reservation boundaries and much of the SMSC owned land has the largest presence of American Indians in the area. The towns of Shakopee and Prior Lake also have American Indian populations higher than 1.6 percent. The results of this map make sense given that we would expect to see a higher concentration of American Indians on the reservation and tribally owned lands. Likewise, many of the surrounding block groups are mostly agricultural or undeveloped land with smaller populations to begin with so we are not surprised to find smaller American Indian populations in these block groups. It is slightly surprising that even on the reservation and tribally owned lands, the percent of American Indians does not exceed 25 percent. This can probably be attributed to the fact that a large area of this block group includes suburban residential development, which most likely has a larger white population. We might expect to see the American Indian population increase in this block group, and surrounding block groups, as the tribe continues to purchase, develop, and attempt to put land into trust.

Figure 1.11: Percent American Indian, 2000

Percent American Indian - 2000



ADDITIONAL MAPS

DONATIONS AND LOANS

The map series Figures 1.12, 1.13, and 1.14 show areas where SMSC made financial loans or charitable donations in the fiscal year 2009. The first map, 1.12, shows the breakdown by state, highlighting the regions where SMSC made donations or loans. The map shows the states in which money was donated, and the circles represent differences in the amount of money donated. The largest areas of donation were in the Midwest, particularly in Minnesota and South Dakota. It is not surprising that the largest amounts were given to the Upper Midwest, given the tribe's location in Minnesota and the location of fellow Dakota bands. In 2009, SMSC granted \$30 million in direct gifts and services and \$129 million in economic development loans (SMSC 2009).

Figure 1.13 illustrates donations in the Upper Midwest by zip code. This further level of detail highlights specific areas within states where the tribe gave money. In Minnesota, sizable donations were made to Twin Cities' zip codes as well as the Ojibwe reservations in the northern part of the state and Upper Sioux reservation to the west. In North Dakota and South Dakota, nearly all donations and loans were granted to American Indian tribes or other American Indian organizations. Many of these were for improving or restoring facilities and community spaces; others emphasized health and education programs. The map represents a range of donation amounts per zip code, ranging from two thousand dollars to \$9 million.

Figure 1.14 shows the SMSC donations in the Twin Cities area by zip code. The map shows clustering of larger donation amounts in central Minneapolis and Saint Paul. Major recipients of donations in the Twin Cities include non-profit organizations such as Indian Youth of America, Minneapolis American Indian Center, and Division of Indian Work, which are noted on the map. Many smaller donations were given to a wide variety of Indian and non-Indian non-profit organizations throughout the Twin Cities metro region. Large donations were also made to medical institutions, primarily at the University of Minnesota. In 2009, SMSC completed a multi-year pledge to the construction of the Tribal Plaza at the TCF Bank Stadium at the University of Minnesota. Sizable grants were also given to towns of Prior Lake and Shakopee as a result of ongoing relationships and work between these two towns and SMSC. Total donations and loans per zip code range from two thousand dollars to over two million. SMSC's choices in donations reflect patterns of investing in the larger American Indian community as well as the regional and local non-American Indian community.

Figure 1.12: SMSC U.S. Donations, 2009

SMSC Donations: United States 2009

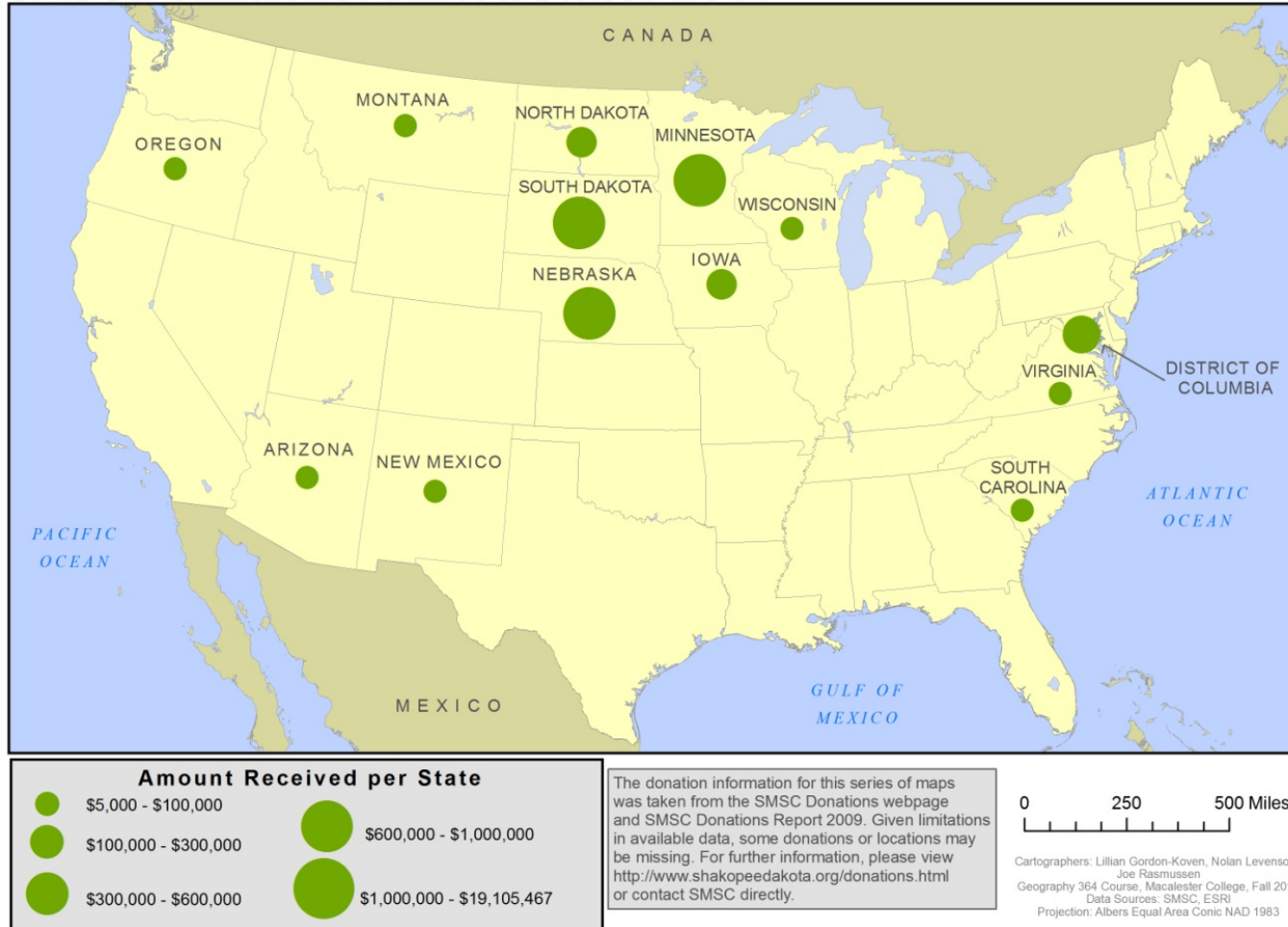


Figure 1.13: SMSC Midwest Donations, 2009

SMSC Donations: Midwest 2009

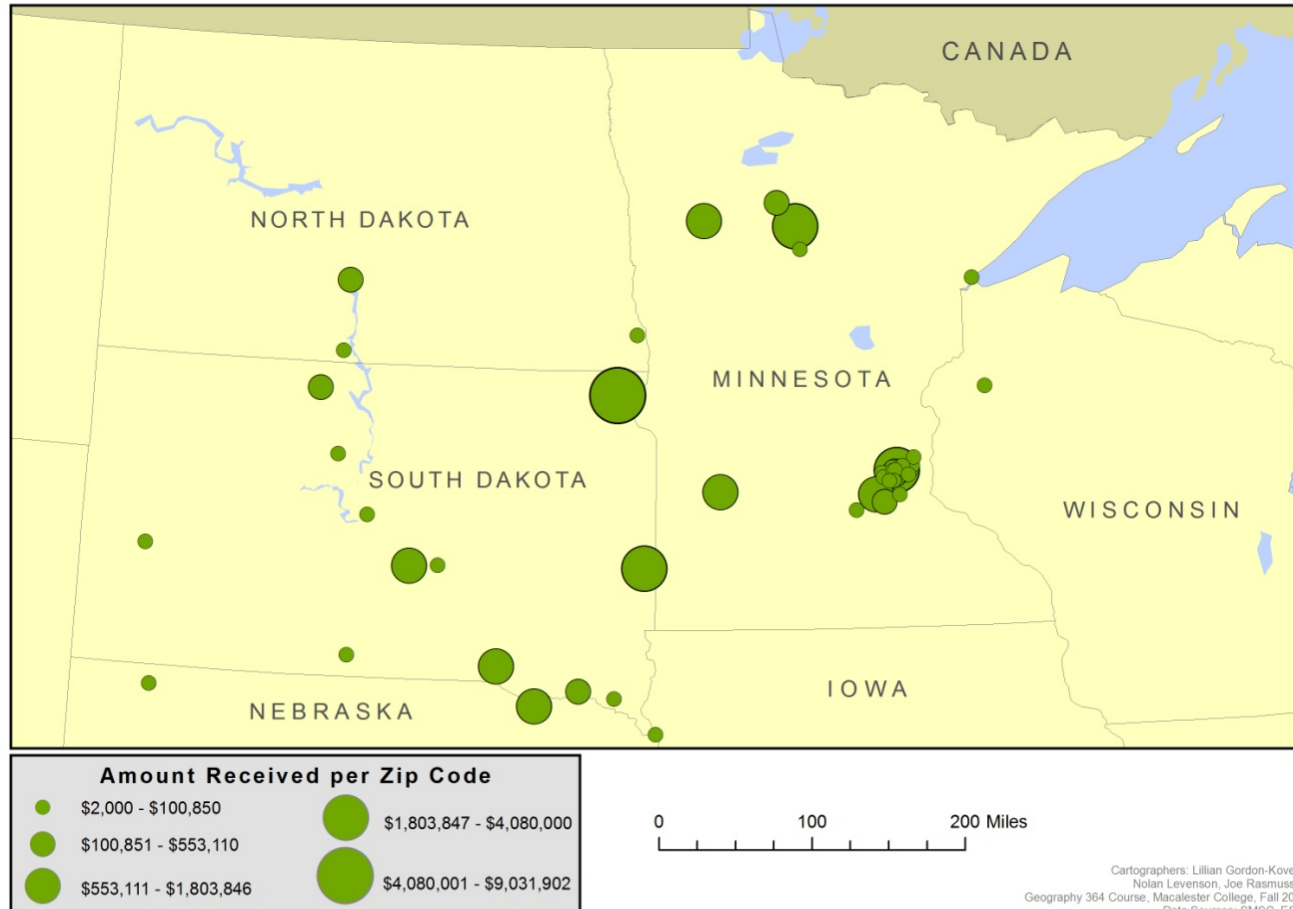
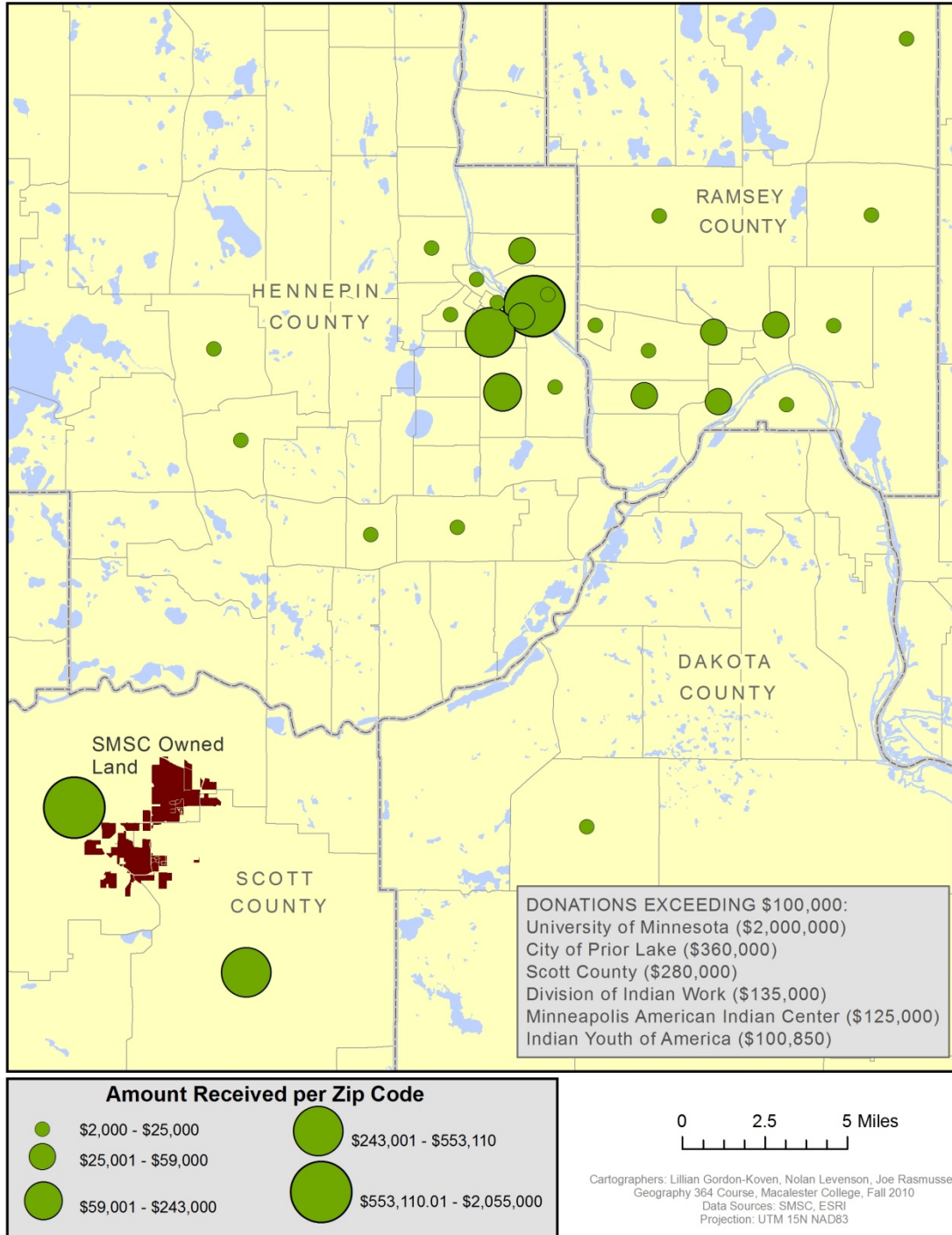


Figure 1.13: SMSC Twin Cities Donations, 2009

SMSC Donations: Twin Cities 2009

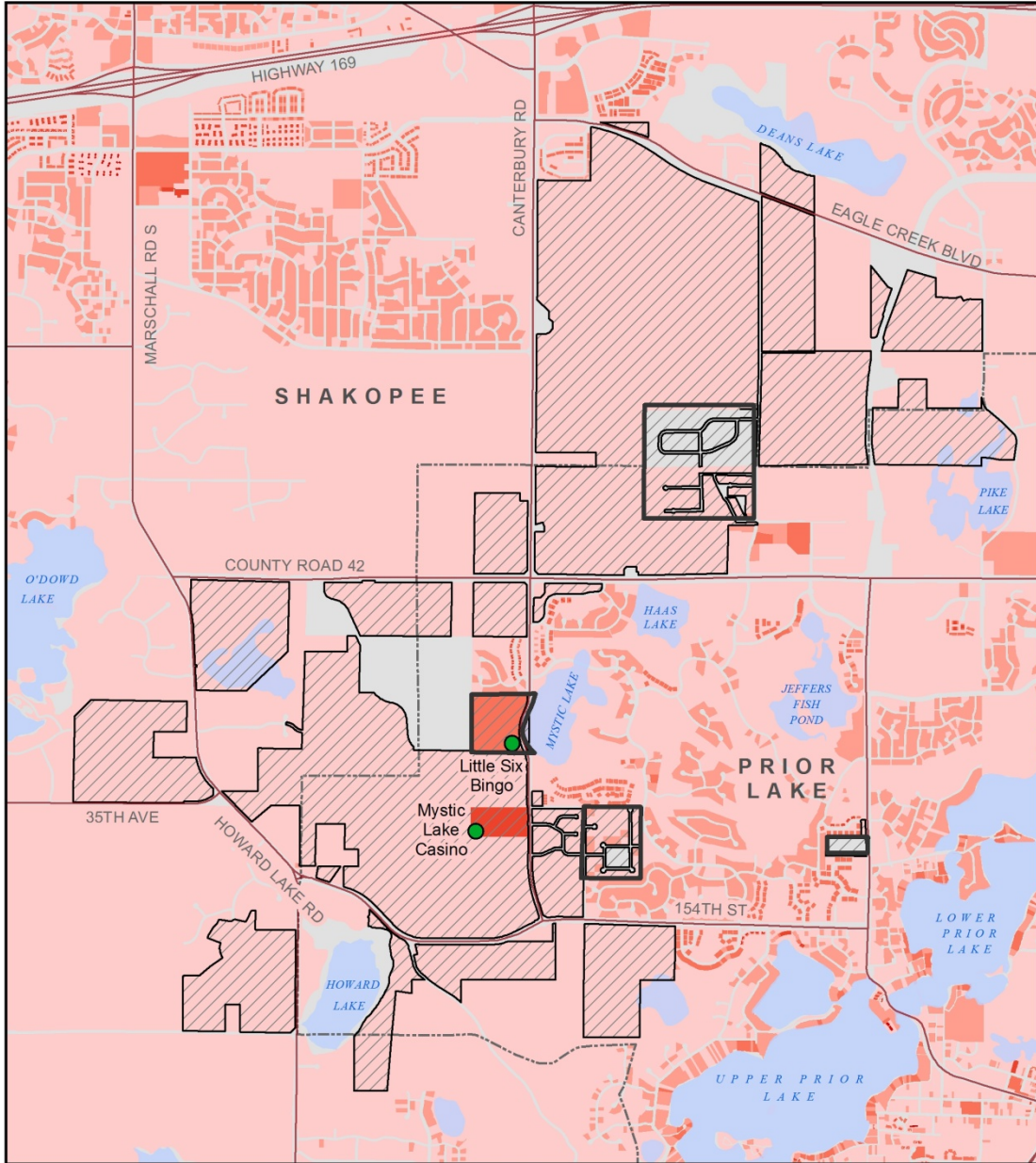







LAND VALUE

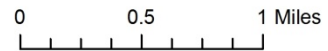
Figure 1.15 illustrates the estimated market value per acre of properties on SMSC owned land and the surrounding area. It is important to note that many parcels are less than an acre, which may distort value. Value is measured per acre to allow for comparisons across parcels of different sizes. Estimated market value reflects how valuable a parcel of land is estimated to be by the Scott County Assessor's office. The map illustrates that the most valuable lands in the area are small parcels in the towns of Shakopee and Prior Lake, particularly lakefront properties, and the properties occupied by Little Six Bingo and Mystic Lake Casino. Likewise, the least valuable lands in the area are in the strip of land between Shakopee and Prior Lake. When referencing Map 1.16, the land use map for the same area, we find that these are mostly undeveloped and agricultural lands. The high values of residential properties in the centers of Prior Lake and Shakopee, on small parcels with desirable physical amenities, is logical given the relative nature of the Twin Cities housing market. Similarly, the incredibly profitable casinos on SMSC owned land have the highest values of any tribally owned land because their commercial development and unique place in the region make these properties very valuable. The lower values of much of the SMSC owned lands could probably be attributed to the land's status as agricultural and undeveloped lands. We assume the tribe may want or attempt to convert these agricultural or undeveloped lands to housing in the fairly wide strip between the two existing suburbs. If these areas become residential, we might expect to see the pattern of residential streets with small parcels and higher values extend, bridging the gap between Shakopee and Prior Lake. In total, the tribe owns much of the least valuable land in the area, as well as two of the most expensive and unique properties in the area.

Figure 1.14: Estimated Land Value, SMSC and Surrounding Areas

Land Value - SMSC and Surrounding Area



Estimated Market Value per Acre	
	\$10,700,000 - \$184,580,000
	\$5,700,000 - \$10,700,000
	\$2,250,000 - \$5,700,000
	\$800,000 - \$2,250,000
	0 - \$800,000



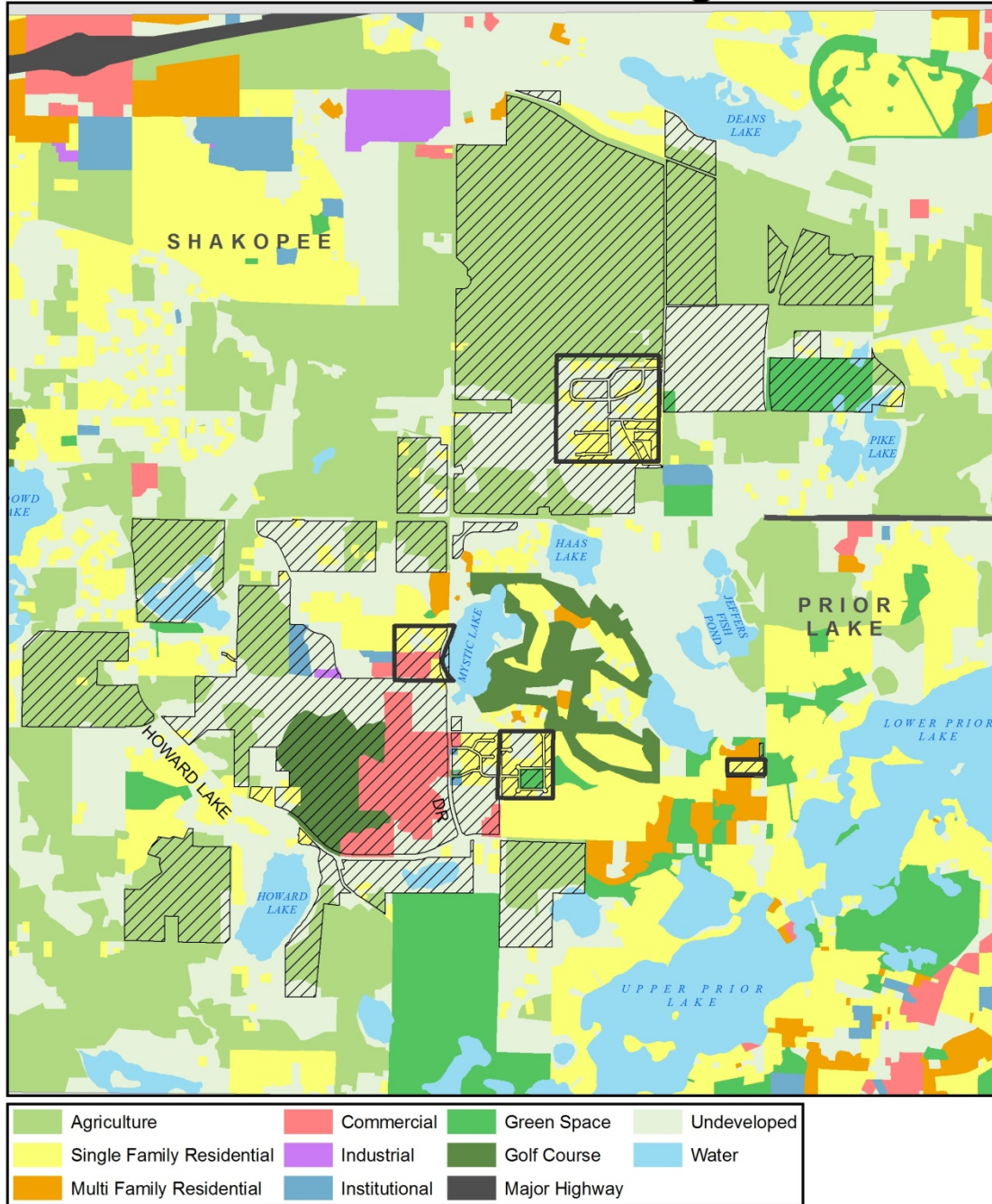
Cartographers: Lillian Gordon-Koven, Nolan Levenson,
and Joseph Rasmussen
Geography 365 Course, Macalester College, Fall 2010
Data Sources: ESRI, MetroGIS, Scott County

LAND USE

Figure 1.16 shows the variety of uses for the land on and surrounding SMSC owned lands in Shakopee and Prior Lake. The land use of the area as a whole is rather diverse with large areas of agricultural, residential, and undeveloped land. There are also small commercial, industrial, and institutional lands in the center of both Shakopee and Prior Lake. On SMSC owned lands, however, the main uses are agricultural and single family residential. There is also a sizable amount of land that is currently undeveloped. The two main commercial areas, which highlight the Mystic Lake Casino and Little Six Bingo, are shown in pink. The large dark green portion next to Mystic Lake is a golf course connected to the resort and casino. It is interesting to note that there is very little residential area and virtually no multi-family residential units within the tribally owned lands. It is noteworthy that there are sizeable areas of agricultural and undeveloped lands to the northwest and southwest of existing tribal lands. We might assume that these would be logical areas of expansion for the tribe, particularly given the presence of adjacent, existing residential areas and private uses.

Figure 1.15: Land Use, SMSC and Surrounding Area

Land Use - SMSC and Surrounding Area



0 0.5 1 Miles

Cartographers: Lillian Gordon-Koven, Nolan Levenson,
and Joseph Rasmussen
Geography 365 Course, Macalester College, Fall 2010
Data Sources: ESRI, MetroGIS, MnDOT, Scott County

CONCLUSIONS

This chapter and its' maps reflects a variety of demographic, social, and economic facets of Shakopee Mdewakanton Sioux Community reservation, adjacent owned lands, and the surrounding suburbs. The suburban towns of Prior Lake and Shakopee sit to either side of the SMSC owned lands and the dynamics between these predominately non-Indian, relatively affluent communities and SMSC highlight many interesting patterns. On the whole, the area shown on these maps is more economically prosperous than the majority of the state of Minnesota. These maps illustrate the high land values of the area, low amounts of poverty, and high median household incomes.

The prosperity of SMSC stands in contrast to the typical conception of contemporary American Indian populations. Perhaps the main reason for this difference is the extremely profitable Mystic Lake Casino and Little Six Bingo. Though many other American Indian communities in Minnesota own and operate casinos and resorts, the proximity of Mystic Lake and Little Six to the Twin Cities makes them much more accessible, increasing visibility and number of visitors. Other chapters in this report highlight much higher rates of poverty in other American Indian communities and reservations. As such, it is natural to question what kind of a relationship exists between SMSC and other Minnesota tribal groups.

While Scott County has become more urbanized over time, the tribal lands remain relatively rural or undeveloped. However, it seems as though the tribe has plans to construct more commercial and residential space on their lands, following trends of suburban development. If the trend of the expanding metropolitan area continues, the land will continue to increase in value, and more suburban developments will most likely occur. It will also be interesting to see if the tribe considers using real estate as another means to gain wealth.

Limits to growth for the tribe are caused by clashes with neighborhood residents and local, regional, and state government. This is already happening with the lawsuits over recently acquired lands that the tribe has attempted to place in trust. As discussed earlier in this report, contemporary struggles to put acquired lands into trust can be incredibly difficult for tribes. This is certainly the case for SMSC, given the role of suburban government, proximity to the largest metropolitan area in the Upper Midwest, and growing nature of that metropolitan area.

Looking ahead, further studies of the area might hope to highlight the internal demographic and social characteristics of the tribe to identify any areas of need. Such studies would require significant input from SMSC itself, but could be useful for future development of tribal lands and further land acquisition. Other studies could potentially emphasize areas of expansion in which SMSC already provides services to surrounding local communities, to help ease political tensions. Such potential future studies would compliment this series of maps, continuing to expand on the themes of relationships with external communities, development of existing lands, and tribal economic growth.

PRAIRIE ISLAND INDIAN COMMUNITY

INTRODUCTION

The Prairie Island Indian Community (PIIC) continues the presence of the Mdewakanton group of the Dakota American Indians in southeastern Minnesota, where they have lived for centuries and which they consider their homeland. According to their oral history the Dakota did not migrate here, as white anthropologists have claimed, but were created at the juncture of the Minnesota and Mississippi Rivers (Wazyatawin 2008). Located about 40 miles from Saint Paul on an island in the Mississippi River near Red Wing, the PIIC is the closest American Indian community to the Twin Cities other than the Shakopee Mdewakanton Sioux Community, which is on the outer edge of the Metro area. As a result of this proximity to the densest settlement in Minnesota, many (though not all) of the Dakota people were violently removed from the region beginning with the presence of White settlers in the mid-1700s. During the mid-1800s, the Dakota nation signed a series of treaties with the U.S. government, ceding much of their land in exchange for supplies and resources. When the U.S. government failed to uphold their treaty obligations, the Dakota people revolted in 1862. After the ensuing war the Dakota were exiled to North or South Dakota or Nebraska, and only about 200 (who had not participated in the war) remained in Minnesota (Ebbott 1985). Eventually, many returned to their homelands of southern Minnesota, some settling at Prairie Island (Prairie Island; Indian Affairs Council 2010).

In 1886 the Secretary of the Interior created the Prairie Island Reservation, purchasing and placing into trust 120 acres. The land base expanded through further purchases by the secretary and the Indian Reorganization Act of 1934. Government actions subsequently diminished some of this land. The 1938 construction of the U.S. Army Corps of Engineers Lock and Dam flooded much of the island, including burial mounds, and raised the floodplain so that only 300 livable acres remain. Also, in 1973 Northern States Power Company (a subsidiary of Xcel Energy) began operating a nuclear power plant on the island and storing the waste on-site, representing potential environmental health hazards to the community (Indian Affairs Council 2010).

Today the community owns about 1,800 acres of trust land and 675 acres of taxable fee land. They also have a 1,300 acre piece of land known as Parcel D that President Bush

placed into trust in 2006 to replace the land lost to the Lock and Dam, but this land is not buildable as much of it is wetlands or underwater. There are more than 700 tribal members, but only about half live on the reservation due to limited land base and available housing. The growth of the gaming industry has been an important economic development tool for the community. They own and operate the Treasure Island Resort & Casino on the reservation. Treasure Island, tribal government, Mount Frontenac Golf Course, Dakota Station, and the Prairie Island Police Department, among other tribal operations make PIIC the largest employer in Goodhue County (Indian Affairs Council 2010). Another important development project on the reservation is the Edwin S. Buck Jr. Memorial Buffalo Project, founded in 1992 with the donation of a six year old bison bull from the Lakota Nation of South Dakota. As of 2005, the community grew the herd to about 40 bison, which roam along the Mississippi river. “The Buffalo Project supports the Native Mdewakanton Sioux culture, spirituality, and provides community families with highly nutritional meat. The goal of the Buffalo Project is to grow the herd and provide bison meat for community members and their families” (Prairie Island).

For this chapter, we compiled data from various sources such as the U.S. Census and Goodhue County offices to create maps of land status today for the Dakota people at Prairie Island Indian Community. These maps illustrate the current landownership patterns on and around Prairie Island, as well as how they correlate with patterns of wealth, population density, land use, and land value.

CORE MAPS

DENSITY

Figures 2.1 and 2.2 show population density in 2000 and 2008 for PIIC and surrounding areas. These maps show virtually no change in density or distribution of people through most of the decade. The maps show that the only area of notable density is the town of Red Wing; the majority of the land shown on the map has a density of 0-500 people per square mile. The PIIC reservation is in a rural area. Results of other maps in the series reflect the low population totals and the rural character of the area. It is also important to note that the low population totals (about 200 people on the PIIC reservation in 2000) and low density can make trends look more exaggerated on these maps. The absence of change in density or distribution of density in the area between 2000 and 2008 shows that there has not been much population change in this area in the past decade. Overall, these density maps reflect a typical Midwestern, rural pattern: mostly low density agricultural or prairie lands, the clustering of people in small towns, and relatively stable population across the area.

Figure 2.1: Population Density, 2000

Population Density - 2000

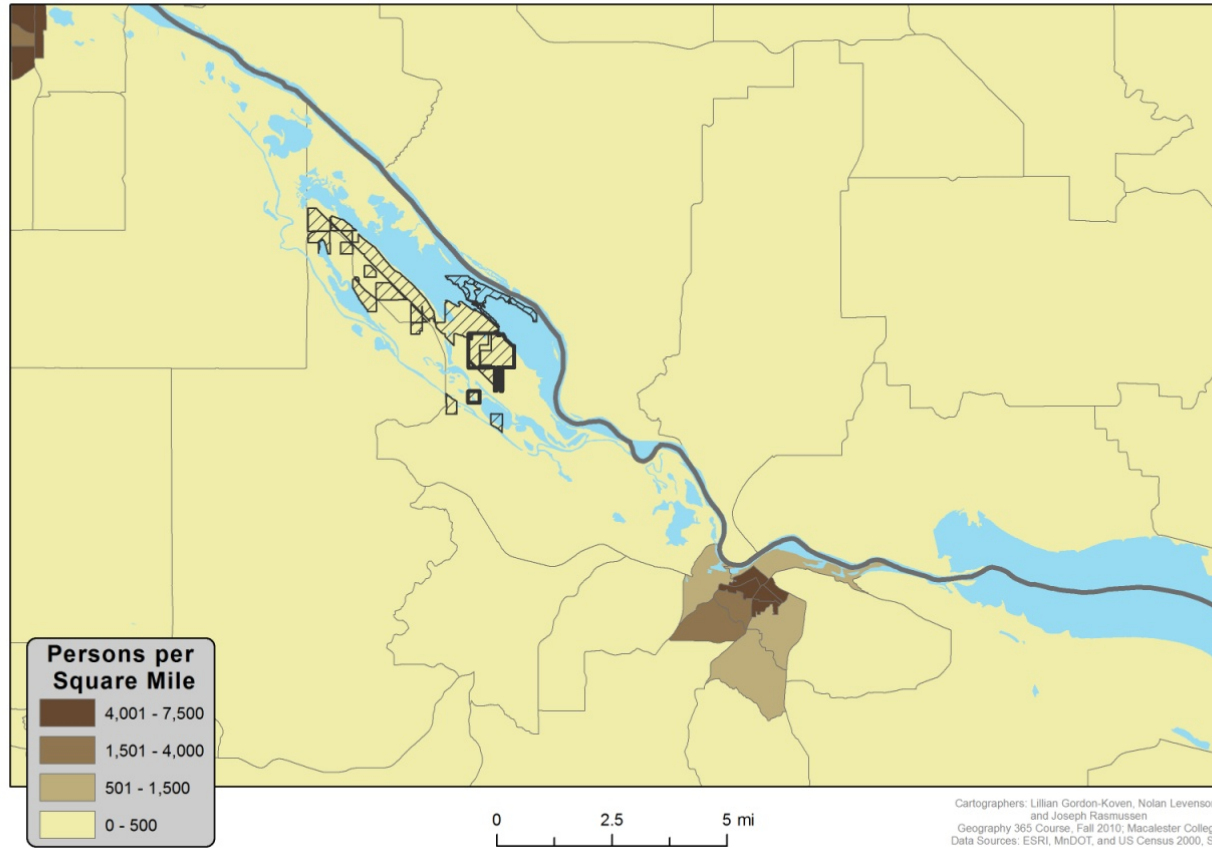
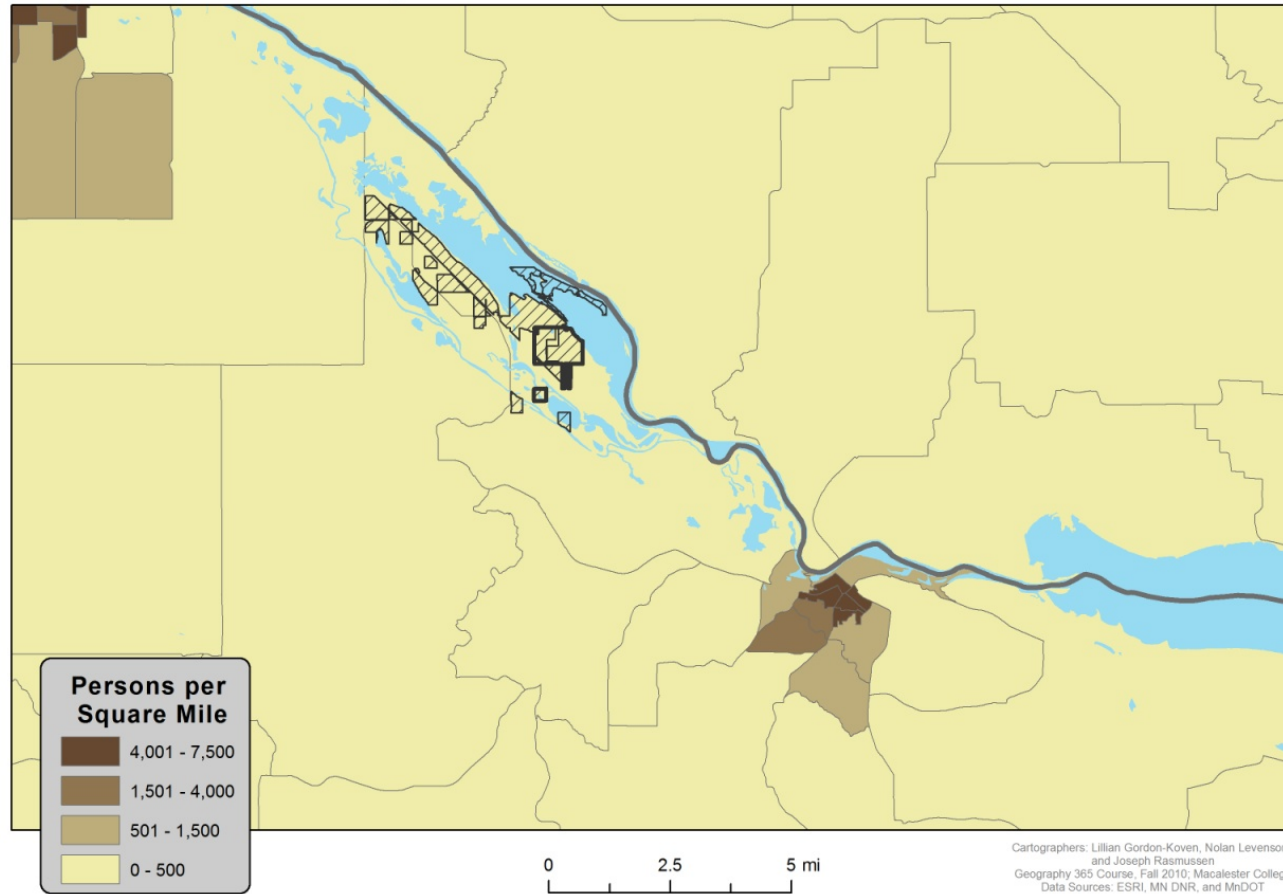


Figure 2.2: Population Density 2010

Population Density - 2010

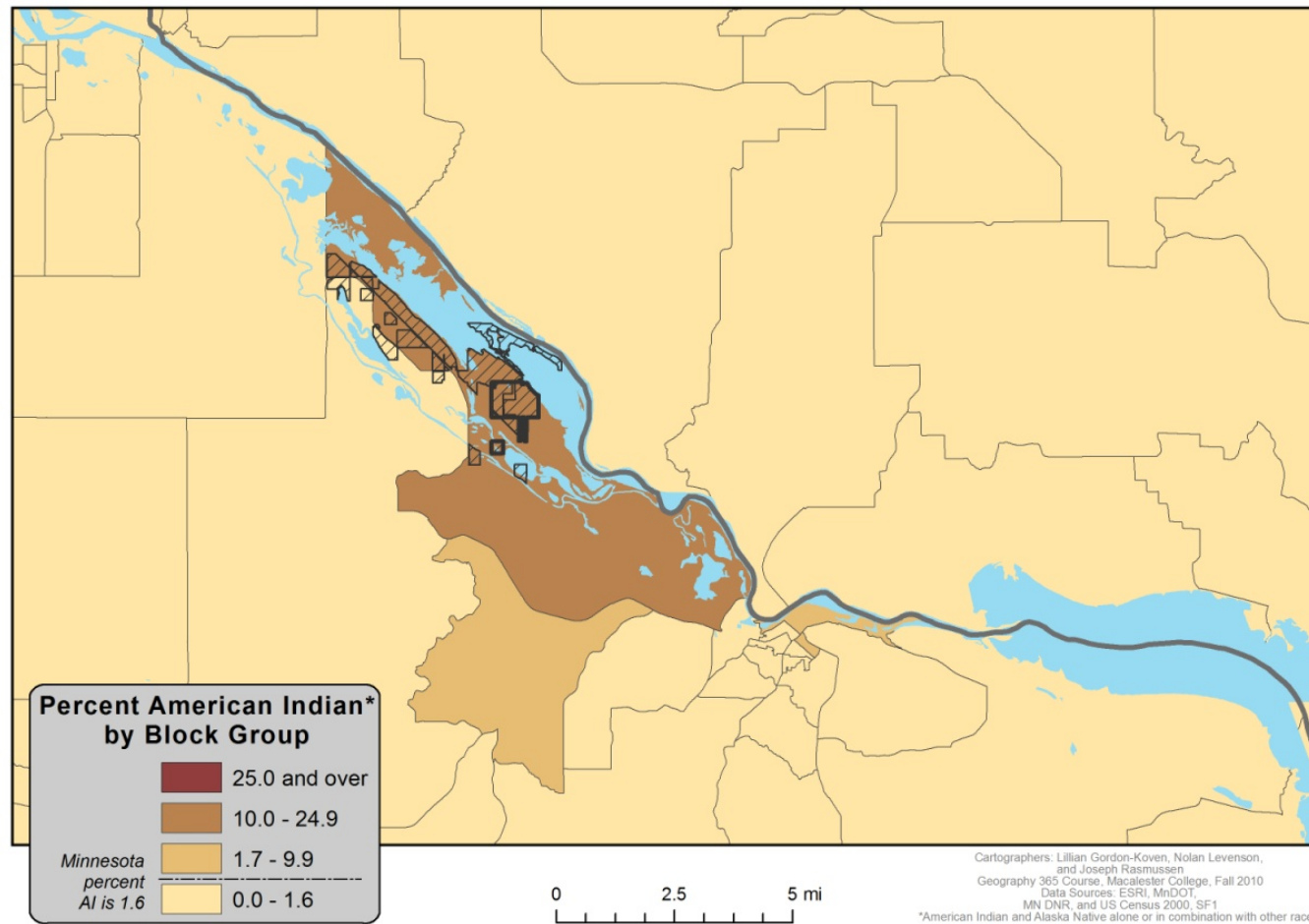


RACE

Unsurprisingly the American Indian population in Red Wing and Welch is highly concentrated on or near the reservation. In the Census block group containing the reservation, and most of the PIIC-owned land, American Indians make up between 10 and 25 percent of the population. The block group directly to the south of the reservation and one in Red Wing also have between 2 percent and 10 percent American Indian population. In the rest of the surrounding area American Indians make up less than Minnesota average of 1.6 percent of the population. When interpreting these rates it is important to remember that this is a very low-density region, so these percentages represent small numbers. Census figures from 2000 indicate a population of about 250 on PIIC's reservation and trust land. This is in comparison to the approximately 700 total tribal members who live in the surrounding area and throughout Minnesota.

Figure 2.3: Percent American Indian, 2000

Percent American Indian - 2000



POVERTY

Figure 2.4 shows poverty rates from the 2000 U.S. Census. Most of the area within and around the PIIC is below the state poverty rate, except for the block groups in the city of Red Wing. However, there is still between 4.0 and 7.9 percent poverty in the majority of the land shown. It is important to note that these areas are low density and primarily rural, so the block groups cover larger areas than urban block groups. Likewise, with such small populations, even a 4.0 to 7.9 percent poverty rate can be significant and substantial. Lastly, it is interesting to note that the block group encompassing PIIC's reservation has a similar poverty rate to many of its neighboring block groups. This reflects common trends across the rural landscape.

Figure 2.5, however, shows poverty rates from the 1990 U.S. Census. Providing a point of contrast to the previous map, this map allows us to see how the area has changed socioeconomically between 1990 and 2000. Comparing this map with the 2000 map, we can see drastic reductions in poverty levels for the area. The block groups encompassing the tribally owned lands saw a reduction in poverty rates from 8.0 to 24.9 percent to 4.0 to 7.9 percent during this decade. This positive change for the region may be related to development of tribal facilities, including the further development of Treasure Island Resort and Casino. Finally, as 2010 U.S. Census data become available, we suggest further comparison be done by creating a 2010 poverty map for the area to illustrate changes in the past decade.

Figure 2.4: Percent Below Poverty, 2000

Percent Below Poverty - 2000

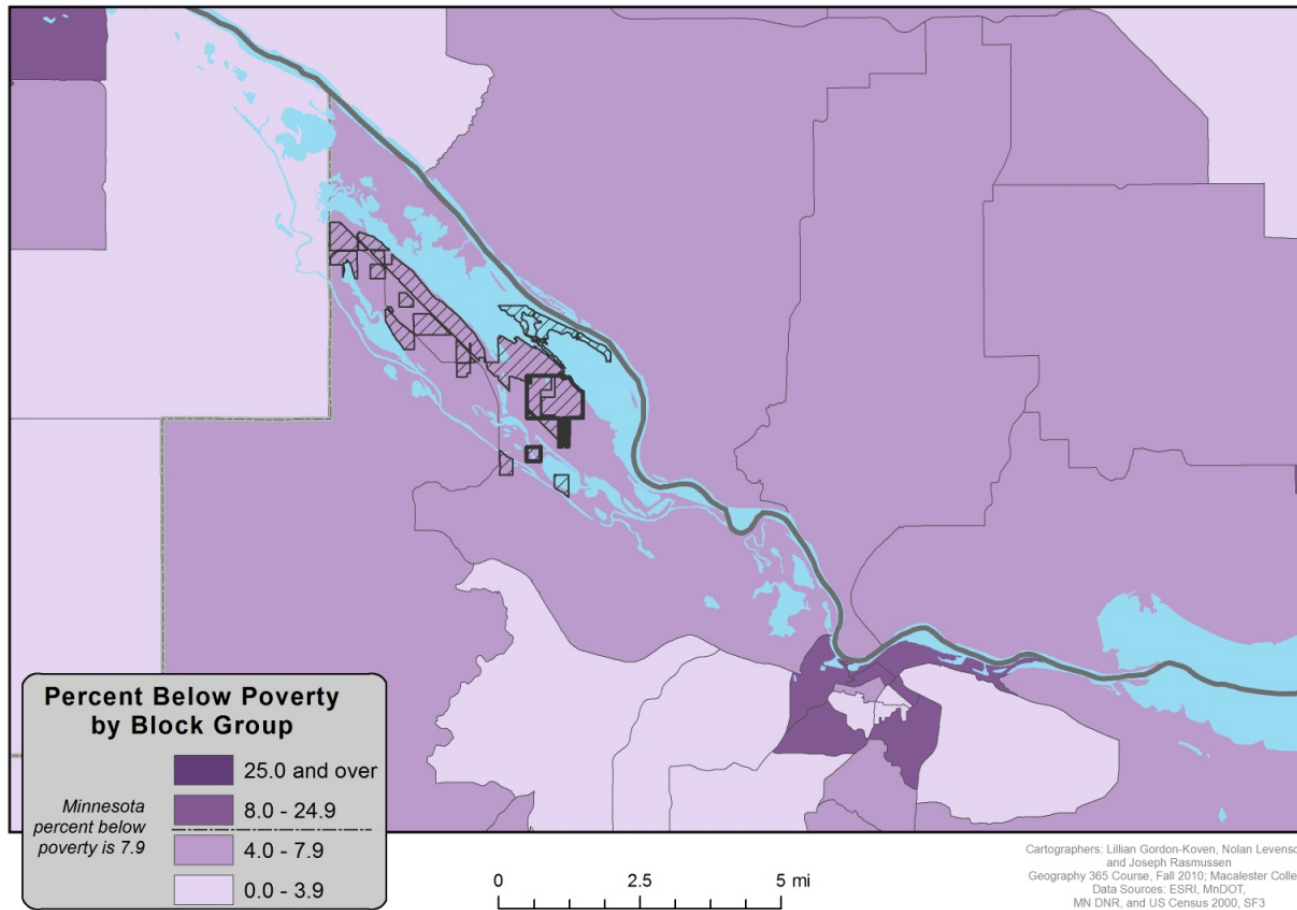
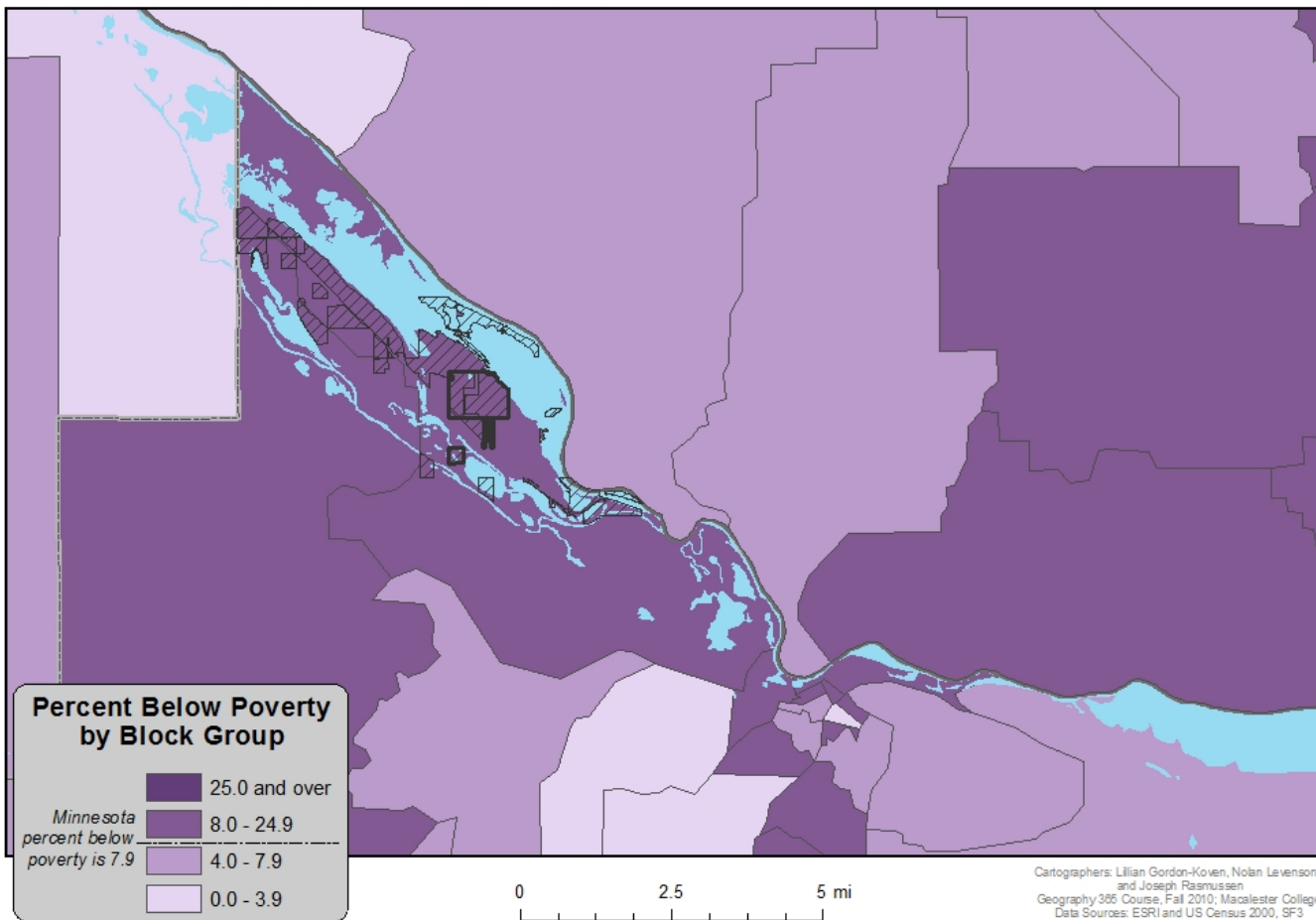


Figure 2.5: Percent Below Poverty, 1990

Percent Below Poverty - 1990



MEDIAN HOUSEHOLD INCOME

Figure 2.6 illustrates the 1999 median household income for the PIIC reservation and surrounding area. The map is designed to reflect how the area compares to the statewide median household income of \$47,111. As seen, the majority of block groups in the area, particularly those on the Minnesota side of the Mississippi River, have median household incomes greater than \$47,111. Despite the above-average household incomes of the area, the wealthiest block group has a median household income of \$66,667. While this maximum is substantially higher than \$47,111, it shows that most of the block groups shown are relatively close to the state median. The block group encompassing PIIC, on the other hand, has a median household income of \$30,000 - \$47,111. As with the block groups exceeding \$47,111, the median household income for these block groups are still relatively close to the state median. In short, the area is more or less on par with the state median. While Map 2.6 highlights the ring effect around the reservation, it is important to note that all the block groups on the northeastern side of the Mississippi River belong in Wisconsin, which had a slightly lower 1999 statewide median household income of \$43,791.

Figure 2.7 shows the 1989 median household income for the PIIC reservation and surrounding area. This map, created to illustrate change over time, shows an increase in median income for the block groups surrounding the PIIC owned lands. Though the block group encompassing the reservation and owned lands did not change dramatically during this time period, positive changes in the surrounding areas are a good indicator for the region. As with poverty, we suggest that as 2010 Census data becomes available, a 2010 median household income map be made. Given the growth of the metropolitan area in the last decade, as well as the continued success of Treasure Island Resort and Casino, we would expect to see further increases in median household income for the region as well as the tribally owned lands.

Figure 2.6: Median Household Income, 1999

Median Household Income – 1999

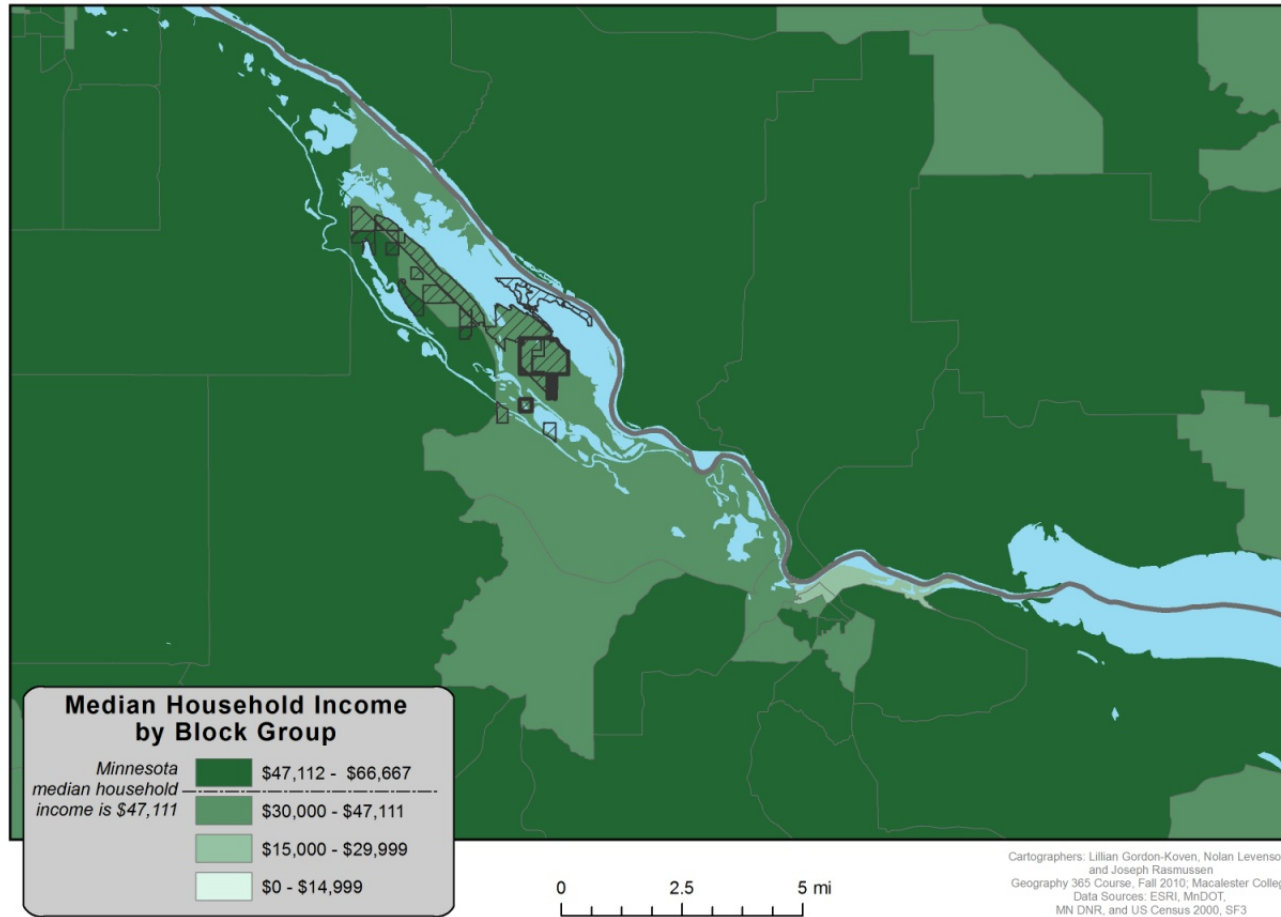
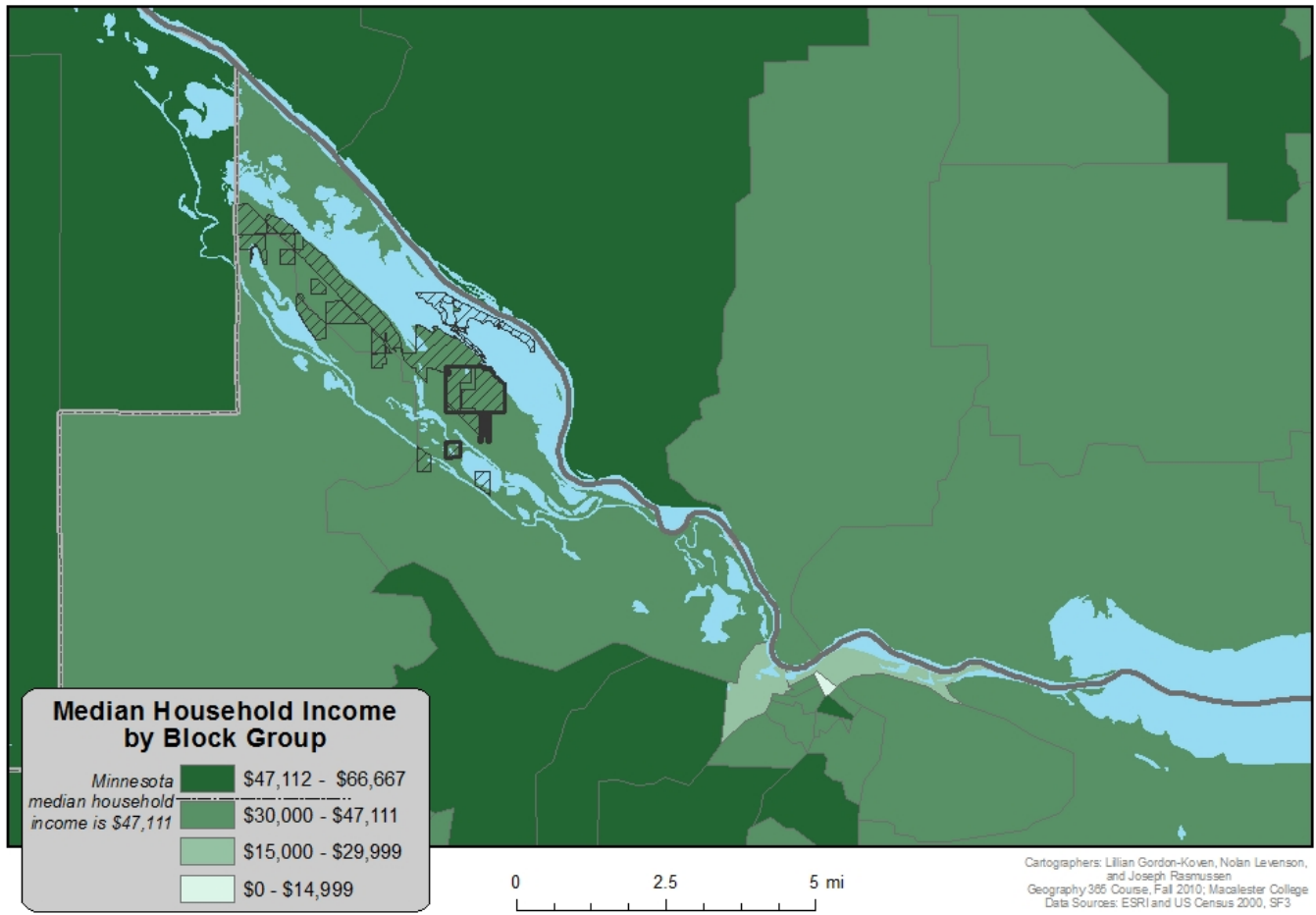


Figure 2.7: Median Household Income 198

Median Household Income - 1989



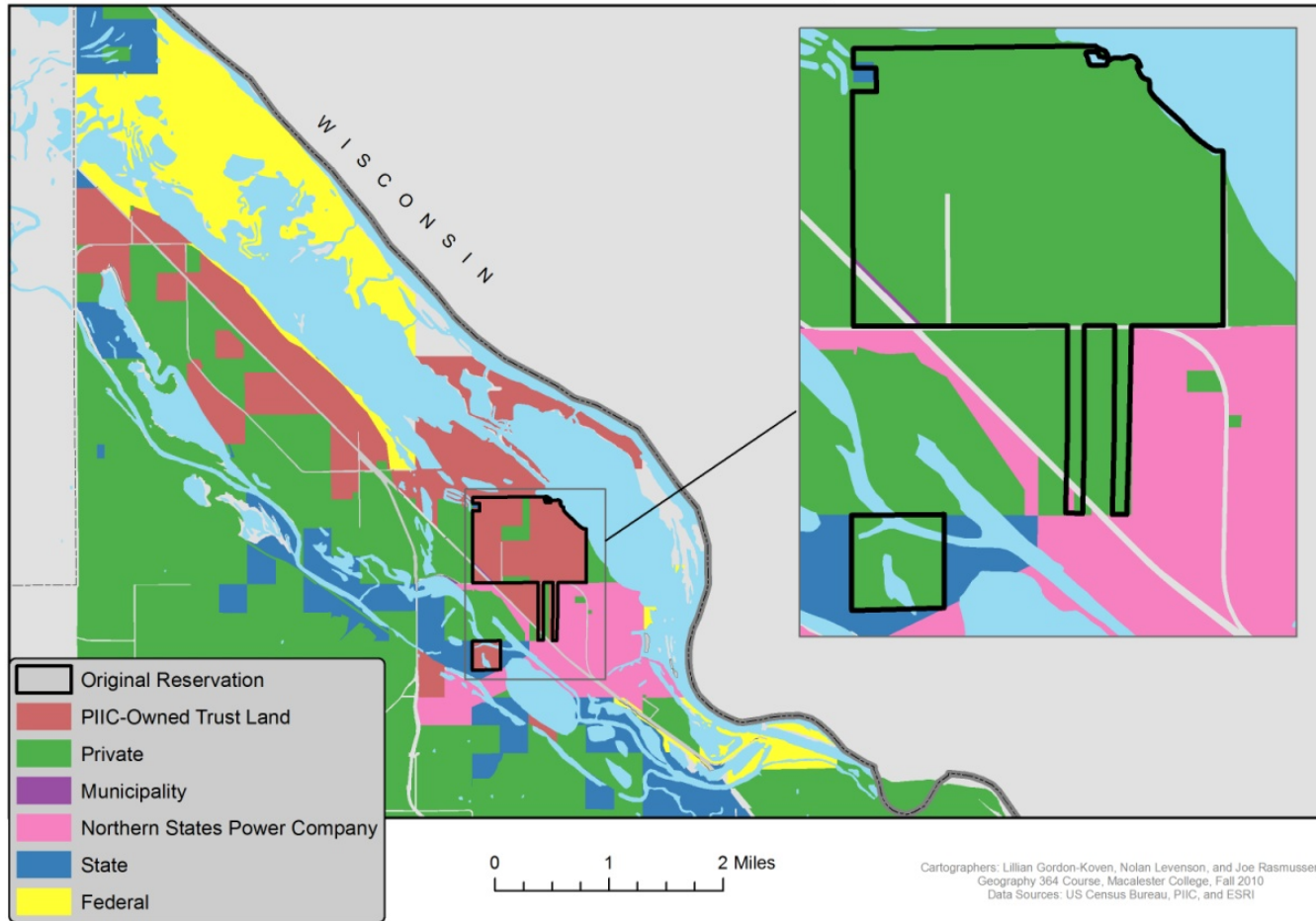
LAND TENURE

Initial analysis of land tenure status on and around the PIIC Reservation reveals interesting, and in some ways, contradictory dynamics. The PIIC is one of the few American Indian communities in the state of Minnesota that still owns all of its initial reservation land, though it is also one of the smallest reservations in the state, a legacy of the violent removal of many Dakota people and also likely related to the relative proximity to the Twin Cities and demand for land in the area. There are a few parcels within the original reservation that are individually-owned fee land. Maps from the tribe still designate these areas as tribal land, so they are likely owned by individual tribal members.

Over the years the federal and state governments have both expanded and contracted the land base. In 1938 construction of U.S. Lock and Dam Number 3 raised the water level of the Mississippi River, flooding much of the reservation, including burial sites, and raising the flood plain so that additional lands were compromised. The 1973 construction of Xcel Energy's nuclear power plant on the island, next to the reservation, and subsequent storage of nuclear waste on-site set up a potential environmental and health hazard for the reservation.

Figure 2.8: Prairie Island Indian Community, Land Tenure

Prairie Island Indian Community Tribal Land



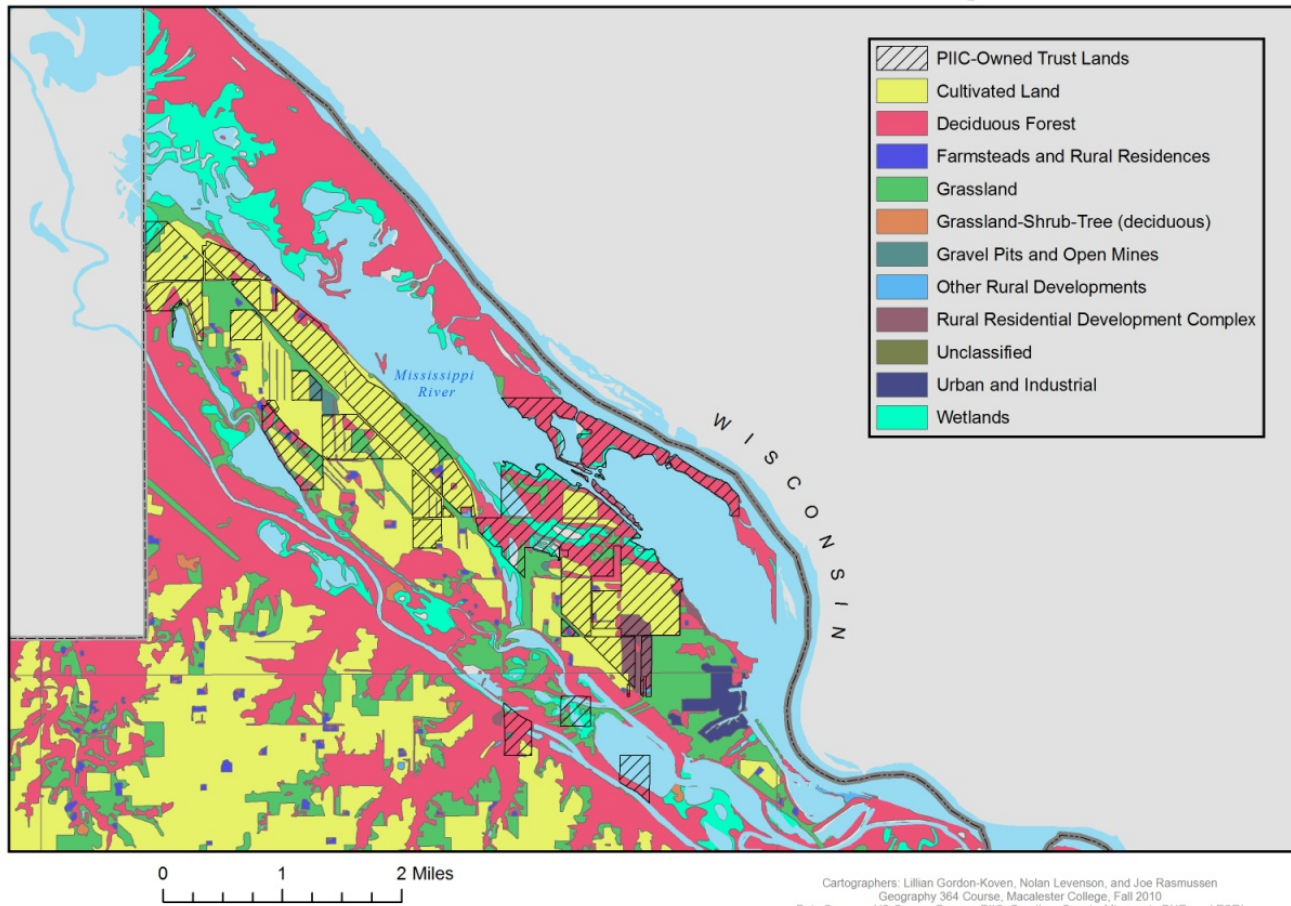
ADDITIONAL MAPS

LAND COVER

The PIIC Reservation is in a very rural area. The majority of the PIIC-owned land is cultivated for agriculture, with a few farmsteads scattered throughout. The southern portion of the original reservation area, near the tribal offices and Treasure Island, is rural residential development, providing housing for tribal members. The area surrounding the reservation is mostly undeveloped or agricultural, so there may be potential for future land expansion if the tribe has available funds.

Figure 2.9: Prairie Island Indian Community, Land Use and Land Cover

Land Use and Land Cover - PIIC and Surrounding Area



CONCLUSIONS

The American Indian community at Prairie Island is shaped in many ways by two seemingly contradictory forces: its rural, sparse population and its proximity to the growing Twin Cities metro area. The availability of open agricultural land and the low density of population settlement have made it feasible for the tribe, with help from the federal government, to expand its land base. On the other hand, the federal government also flooded a significant portion of the PIIC land through the construction of the lock and dam.

Economic activity on and around the reservation is limited. PIIC primarily uses their land for agricultural and rural residential development, with the notable exception of Treasure Island Resort and Casino, their one major commercial activity. The casino presents an opportunity for major growth. However, the casino does not run along a major thoroughfare like other successful casinos such as Mystic Lake, and relies heavily on advertising to attract traffic. However, if the Twin Cities metro area continues to grow it may move larger population markets toward Prairie Island and the casino. Recent suburban growth has been strong toward the southeast, but has been slowed by the recession, and Prairie Island and Red Wing remain separated from the city region and separated from the suburbs by an agricultural region. Remaining focused on agricultural activity to build resources and food security for the tribal community, embodied by the Buffalo Project, makes sense for PIIC in context of the surrounding regional economy.

3

UPPER SIOUX AND LOWER SIOUX RESERVATIONS

The history of the Dakota tribes residing in the southwest of Minnesota is characterized by a history of war, forced migration and economic instability. On the banks of the Minnesota River in the southwestern region of the state, the reservations are very isolated. Because of the sheer number of hurdles in tribes' history and present issues of concern, the Upper Sioux and Lower Sioux are consistently two of the poorest reservations in Minnesota. Some of the issues affecting the tribes today have spurred comprehensive social and health services to support the community. For example, the Upper Sioux Community initiated a committee in September 2005 to take on the problem of consumption of methamphetamine by community members. The program has been successful and stands as an example of positive change on the reservation. Both the Upper Sioux and Lower Sioux are working for the benefit of their communities.

The Upper Sioux and Lower Sioux reservations are located in the southwestern region of Minnesota (See Map 3.1). The Upper Sioux reservation is located in Yellow Medicine County in the Minnesota River watershed. The Lower Sioux reservation, also located in the Minnesota River watershed, is in Redwood County. The region is characterized by a grassland prairie biome (Minnesota Department of Natural Resources [a] 2000). Grassland prairie biomes are very fertile for agriculture, so much of the prairie land in southwestern Minnesota is in agricultural use (Minnesota Department of Natural Resources [b] 2000). Map 3.1 reveals the limits to economic connectivity suffered by the region in which the reservations are located. They are not connected to the Twin Cities or other major economic centers in the state by location or interstate. As well, the major roads network becomes less dense in the region making locating businesses that export products out of the region more difficult because the region does not connect well to the regional economic hubs. Therefore, the lack of connectivity and biome advantages has made agriculture a primary economy in the region. There are, however, other economic opportunities that the reservations can develop to draw money from the sub-regional hubs of Morton and Granite Falls as well as the regional hub of Minneapolis-Saint Paul.

HISTORY

Until the mid-1980's, the Lower Sioux Community were mostly dependant on employment from Government programs operated by the tribe. Additionally, they have been creating traditional Dakota pottery as a unique source of income (Indian Affairs Council 2010). Jackpot Junction, a large bingo facility, was opened in 1984 and has since created successful expansion in the form of the Dakota Inn Motel, an RV park, and a hotel with a convention center (Indian Affairs Council 2010).

The Upper Sioux Community has developed a propane service for the Reservation and the surrounding area, and also run an RV park, generating additional income (Indian Affairs Council 2010). The Upper Sioux Community opened the Firefly Creek Casino in 1990, and has relocated the casino recently in 2003, renaming it the Prairie's Edge Casino Resort (Indian Affairs Council 2010). For the Upper Sioux Community, these sources of income have provided community members with new employment opportunities and have led to increasing economic independence. This has led to the establishment a Tribal Police Department to protect tribal lands and reacquisition of over 900 acres of historic land (Indian Affairs Council 2010).

In the mid-eighteenth century, the Dakota tribes were forced from their homes in the Mille Lacs region by the Anishinnabe Nation. One hundred and fifty years of isolation and infrequent contact kept their religious and social traditions intact despite the adoption of tools, horses, cloth and firearms from European traders (Holmquist and Brookins 1972). The beginning of the era of American occupation was marked by the introduction of treaties. In 1830 the Dakota signed an initial treaty that gave them annuity payments, agricultural and educational funds in exchange for cession of land east of the Mississippi River (Holmquist and Brookins 1972). This and following treaties proposed to exchange Indian land for monetary funding from the settlers, but the settlers broke their promises. The Santee bands begrudgingly participated in the treaties of Traverse des Sioux and Mendota in 1851. This treaty required them to exchange all of their remaining lands in Minnesota for the Upper Sioux Reservation (hosting the Wahepton and Sisseton Dakota bands) and Lower Sioux Reservation (where the Mdewakanton and Wahepkute resided) and annual payments of goods and funding (Holmquist and Brookins, 1972).

Further treaties in 1858 depleted land ownership and strictly managed the use of the remaining reservation lands which were transformed into farmlands that were allotted to every male over the age of twenty-one (Holmquist and Brookins 1972). However, several years of attempts to force the tribes to adopt the European-based agriculture system and a depletion of local game caused by settler hunting created massive food shortages and unrest for the Dakota (Associated Press 1987). The tribes became dependant on meager food provisions from the government, which increased conflict with the non-Indian settlers. These circumstances were enough to push the communities to revolt. In July of 1862, rations of pork and flour were provided at the Lower Sioux Agency. The next day, 4,000 reservation Indians gathered at the Upper Sioux Agency and were given small food provisions and were condemned for attempting to take more. On August 18th, 1862, Chief

Little Crow made the decision to lead the Dakota in a war against the United States after treaties had been repeatedly dishonored (Holmquist and Brookins 1972).

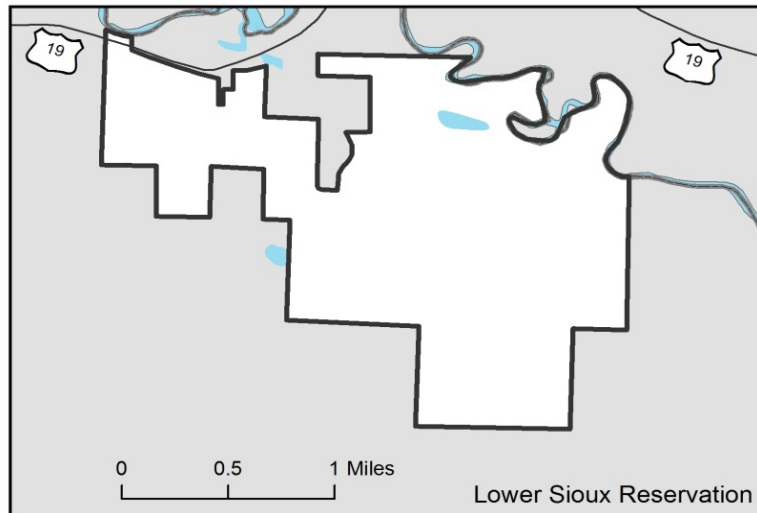
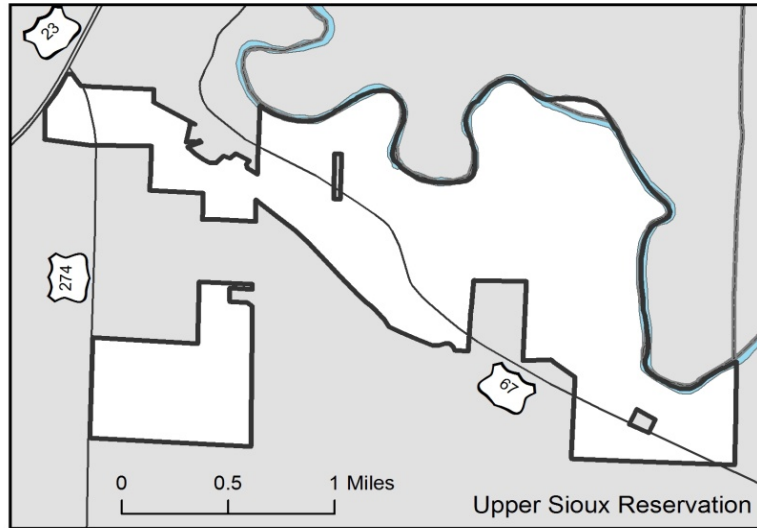
After a very bloody ambush and six weeks of subsequent battles, the Dakota were defeated at the battle of Wood Lake on September 23. As a consequence, the Dakota people who were captured by the military officers were tried in court with no representation to argue their case. Three hundred of 392 Indians and racially mixed peoples were sentenced to death for participation in the uprising, and about 1,700 others made a six-day march to a prisoner's camp near Fort Snelling. President Abraham Lincoln reviewed the evidence and reduced the list of those receiving a death sentence to 39. The execution was the largest mass execution in the history of the United States and the total number of deaths amounted to 500 white settlers and an unknown number of Dakota casualties (Associated Press 1987). In 1863, the Congress formally deported the Dakota from Minnesota to the Crow Creek Reservation in South Dakota, claiming the Dakota reservations for the settlers and refusing to acknowledge all previous treaty agreements. At the end of the war, the only part of the Lower Sioux Community that was left were the walls of a stone warehouse that had been burned, a few homes and the mills. Many Dakota had miserable experiences in South Dakota, and they bravely attempted to return to their homelands out of their longing for their true homelands. In 1863, as a few Indians started to return to Minnesota, a hostile plan was organized to capture those who were returning to the plains. The Minnesota government organized scouting trips and set a \$25 reward for each Dakota scalp taken (Holmquist and Brookins 1972).

Eventually, in 1963 the Minnesota State Legislature authorized acquisition of the Upper Sioux Community and established a state park. Many Dakota bands eventually settled on other Minnesota or South Dakota reservations as well as reservations in Canada after leaving Crow Creek in 1866 due to poor conditions. Settlements near the reservations developed and some Lower Dakota bands avoided exile though were met with racism and encumbered poverty (Holmquist and Brookins 1972). In December 1986, Governor Rudy Perpich claimed 1987 as "The Year of Reconciliation." That year, events were planned to show cultural diversity and appreciation between the Dakota people and non-Indians. Sheryl L. Dowlin writes that: "Varied perceptions and experiences suggest that reconciliation communication efforts provided an atmosphere for "open negotiation" that resulted in peace on multiple levels, honor and respect, understanding, restoration and restitution, educating and healing and forgiveness (Dowlin 1987).

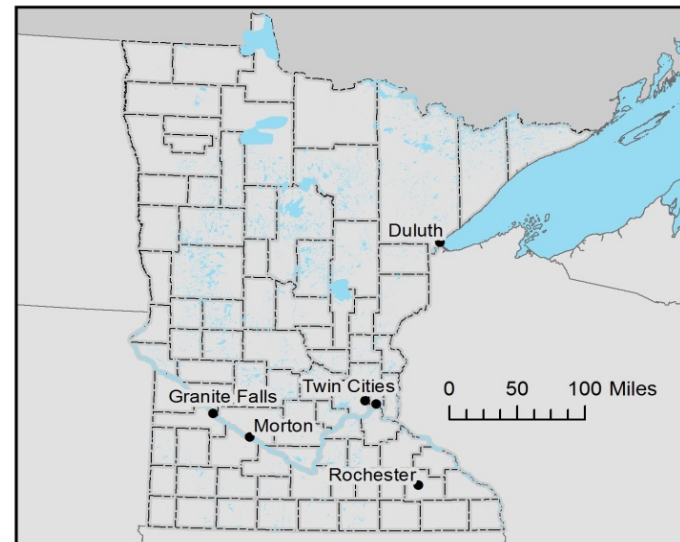
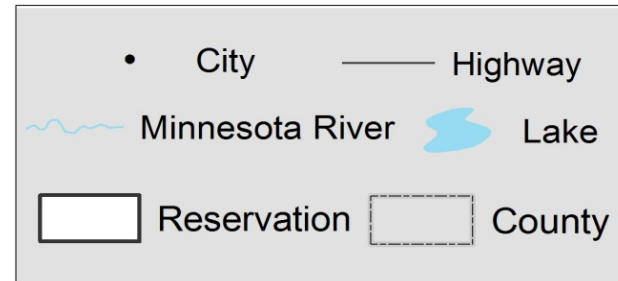
Today, the Lower Sioux Community has 930 enrolled members and the Upper Sioux Community has 453 enrolled tribal members (Indian Affairs Council 2010). In 1993, the Lower Sioux Community established a tribal court that oversees civil cases as well as matters of tribal government (Indian Affairs Council 2010). The Lower Sioux Community has access to a public school, as well as an Indian-focused charter school in Morton, and financial aid is provided to students pursuing further education past high school (Indian Affairs Council 2010).

The remainder of this chapter will focus on demographic maps that depict the spatial patterns of income, poverty, race and population density of the Upper Sioux and Lower Sioux Reservations and surrounding Yellow Medicine and Redwood counties. Also included are maps depicting economic and tourism opportunities as a way to further promote economic revenue. And lastly, we mapped land tenure for the reservations, which shows the current status of the Upper and Lower Sioux Reservations.

Figure 3.1: Reference Map



Upper and Lower Sioux Reservations



Cartographers: Cory Copeland, Peter Mathison, Olivia Posner
Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI, Brian Schulte 2007, Census 2000

CORE MAPS

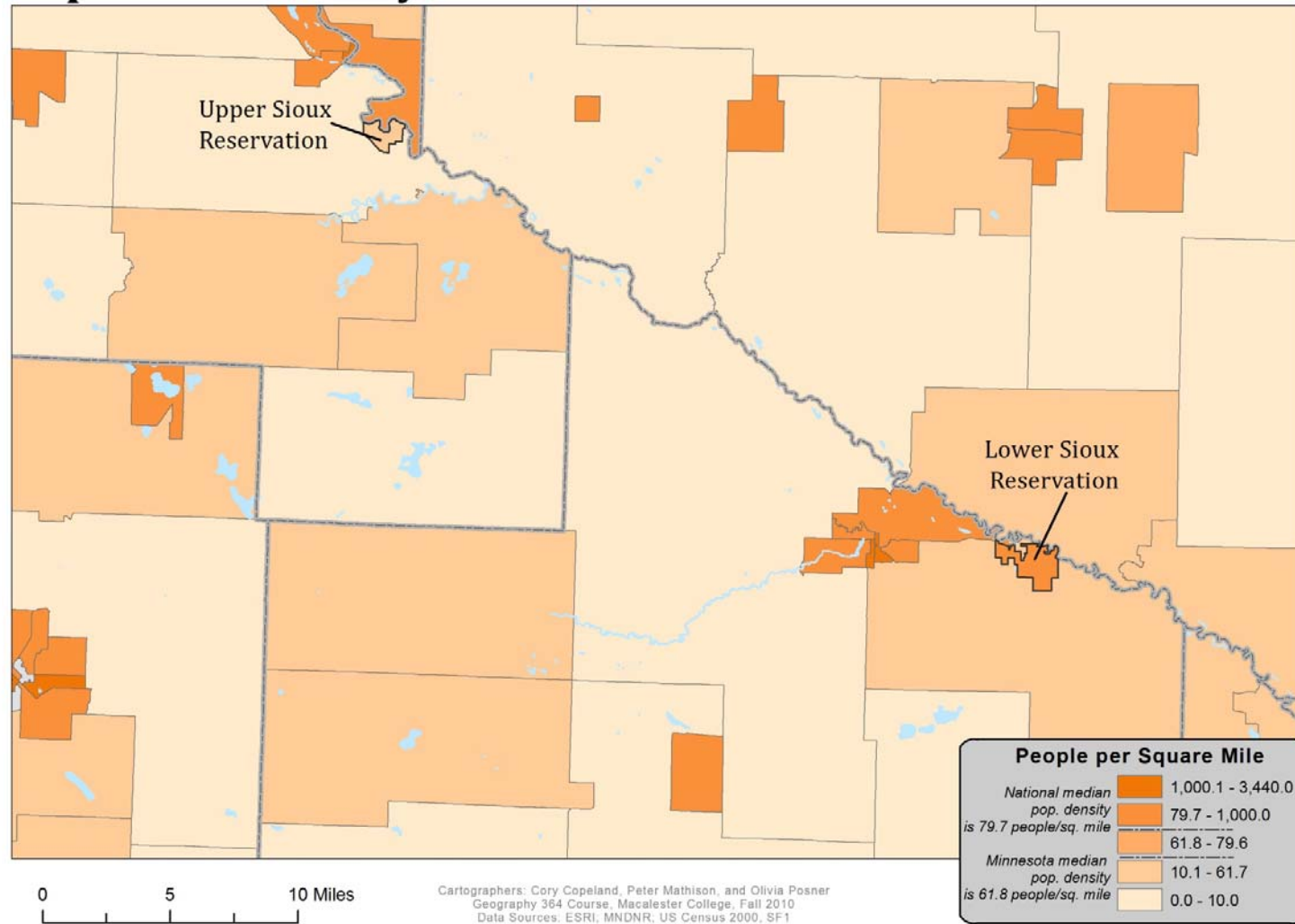
POPULATION DENSITY

The Upper Sioux and Lower Sioux reservations are situated in a largely rural landscape. The 2000 Census defines urban and rural areas based on population density. Census blocks or block groups with at least 1,000 people per square mile are considered urban as are surrounding census blocks with at least 500 people per square mile (U.S. Census 2009). Following these definitions the only urban location in the area is Redwood Falls, located to the northwest of the Lower Sioux reservation in Redwood County (see map 3.3). The estimated population for Redwood Falls (as of the 2000 Census) was 5,459 with a market area serving 17,000 residents of Redwood County and Renville County to the north (City of Redwood Falls 2010). However, Granite Falls to the northwest of the Upper Sioux Reservation in Yellow Medicine County is a large rural town with a population of 3,070 according to the 2000 Census (U.S. Census 2000). Outside of these two townships, the region of the two reservations is overwhelmingly rural with low population densities, with a population density below the national population density of 79.6 people per square mile in 2000 (U.S. Census 2008) and state population density of 61.8 people per square mile (U.S. Census 2000). This low population density provides some limitations to economic development.

Locating retail businesses is related to population and distance. Reilly's rule of retail gravitation and empirical studies have verified that the proportion of customers traveling to a shopping area decreases as the distance grows. Increased variance of products sold in a shopping area can increase patronage. Distances which consumers are willing to travel depend on the type of product and other retail in affects in an area affect the pull of other retail sites (Huff, 1964). The implications of this model are that locating retail on and around the reservations using traditional methods would be difficult and keeping these businesses healthy would be even more difficult because there is not a large consumer base to draw from and the retail businesses located in the higher population areas are more likely to have a large breadth and depth of products. As a result, creating shopping centers outside of the sub-regional hubs will be difficult. Therefore, the reservations could explore other strategies for attracting consumers by improving the appeal of their location situation. One method of drawing consumers into the region discussed in this chapter is through attracting tourists by utilizing natural amenities.

Figure 3.2: Population Density, 2000

Population Density - 2000



RACE

Figure 3.3 shows the percent of the population that identifies as American Indian per block group according to the 2000 Census. For the vast majority of block groups in the map extent, the percent of the population identifying as American Indian is less than 1.6 percent. Several block groups within 10 miles of the reservations, as well as the tribal block groups themselves, are shown to have larger American Indian populations. Of the population living within the boundaries of the Lower Sioux reservation, 90.5 percent are counted as American Indian, and 82.5 percent of the population in Upper Sioux is identified as such. The patterns highlighted by this map are fairly straightforward and unsurprising, as it makes sense that the reservations themselves and areas in close proximity to reservations would have proportionally larger American Indian populations.

MEDIAN HOUSEHOLD INCOME

Figure 3.4 depicts median household income as of the 2000 Census for the tribal block groups representing the Upper Sioux and Lower Sioux reservations compared to median household income for the surrounding larger block groups. The map shows distinctly different median household income levels between the two tribal block groups. The Lower Sioux reservation has the highest median income (\$69,792) of all of the block groups in the map extent, which is also higher than median income for the state as a whole, while the median household income for the Upper Sioux reservation lies at the opposite end of the spectrum (median income = \$25,626), which is almost \$10,000 less than the median household income for Yellow Medicine County (\$34,393) and approximately \$20,000 less than the median household income for the state of Minnesota (\$47,111) (Smith 2004). Median household income for the majority of block groups in Redwood County and Yellow Medicine County is generally somewhere in-between the two reservations' median incomes (the lowest median income for all other block groups in the two-county area is approximately \$25,000, while the second highest median income out of all other block groups is approximately \$50,000), but below the median household income for the state as a whole. This indicates that the area in general is not as wealthy as the rest of the state, while the median household income on the Lower Sioux and Upper Sioux reservations falls on opposite sides of the state median income line.

The reservations' median household incomes suggest unique economic conditions, both compared to the surrounding area as well as to each other. The income disparity between the two reservations as of the 2000 Census could potentially be explained in part by the timing of the casino construction. While the reservation has operated Firefly Creek Casino since 1990, it offered relatively few tourist amenities until it was replaced by the brand new Prairie's Edge Casino and Resort in 2003 (Indian Affairs Council 2010). By contrast, Lower Sioux has offered various tourist amenities (e.g. hotel rooms, convention space, etc.) in association with its Jackpot Junction Casino since the early to mid-1990's (Indian Affairs Council 2010). This would suggest that, at least at the time of the 2000 Census, the Lower Sioux Community had a more profitable major revenue source than the Upper Sioux Community, which might partially explain such a large difference in median household income between the two tribal block groups. Although current median household income

data is not yet available at the tribal block group level, as of 2010, Jackpot Junction exceeds Prairie's Edge both in gaming as well as hotel capacity. If, when updated figures become available, there remains a substantial disparity in median household income between the two reservations, differing levels of relative casino revenue may continue to at least partially explain this disparity.

Figure 3.3: Percent American Indian, 2000

Percent American Indian - 2000

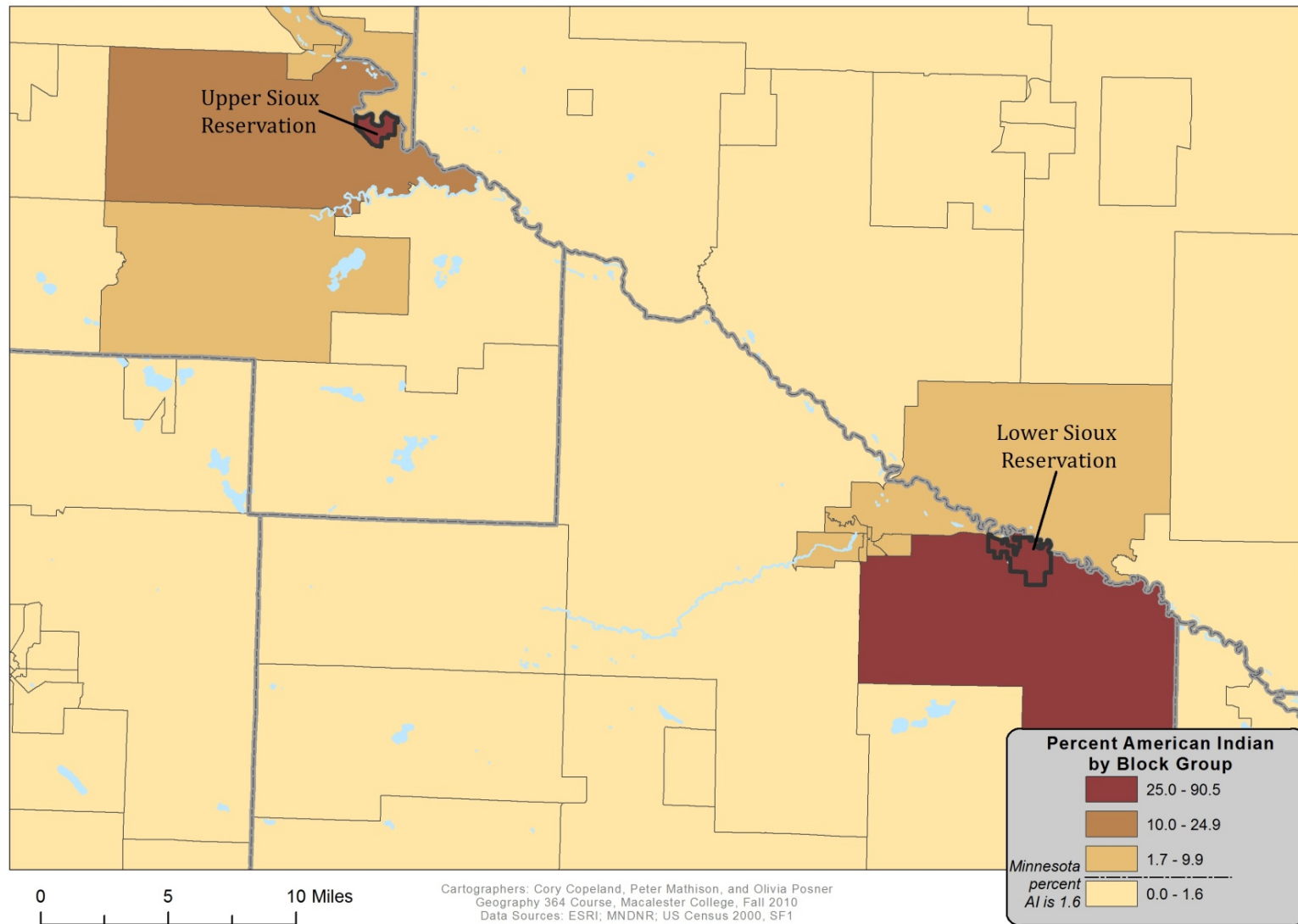
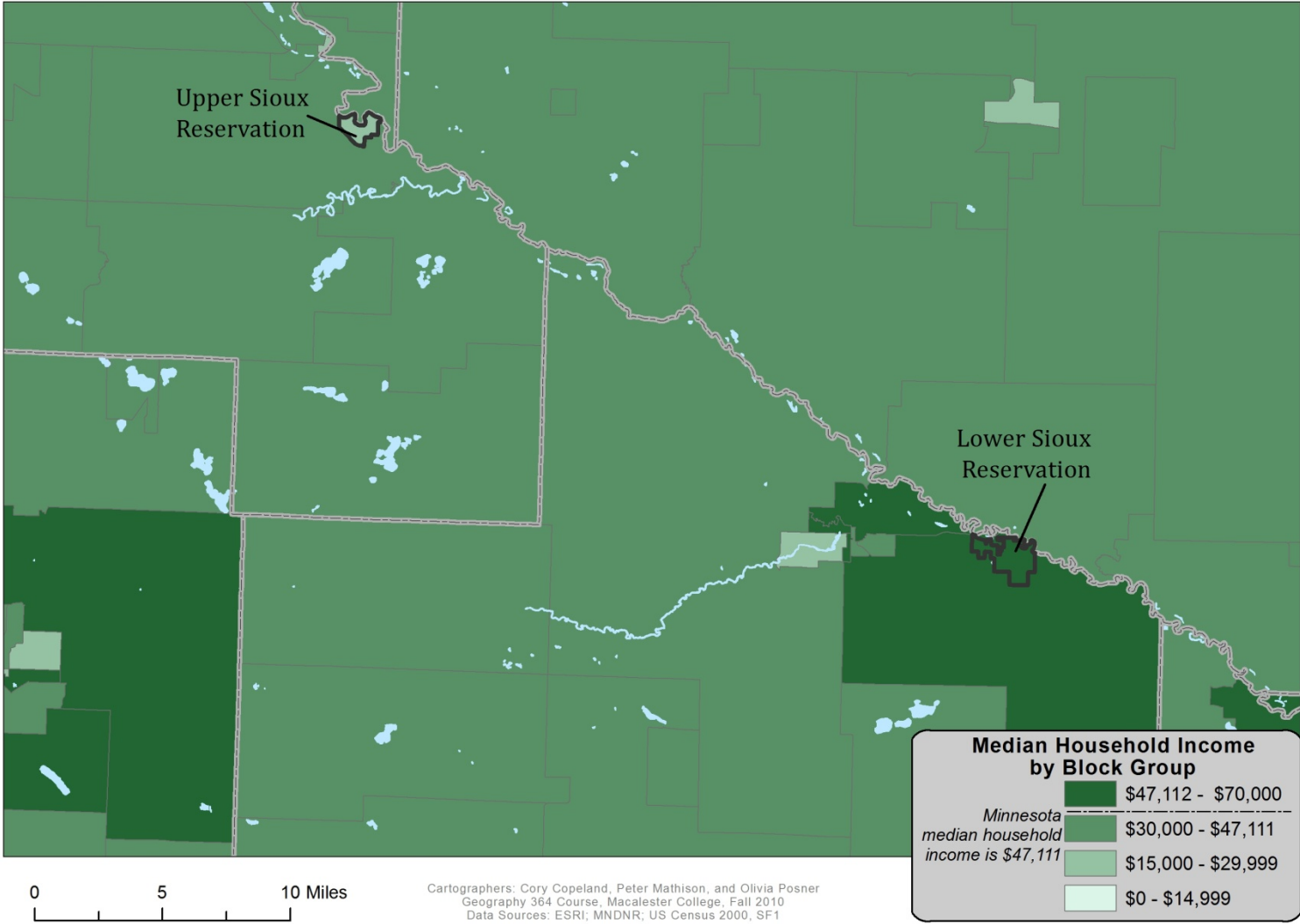


Figure 3.4: Median Household Income, 1999

Median Household Income - 1999



POVERTY

Figure 3.5 shows the percent of the reservations' populations living below the poverty line compared to the level of poverty in surrounding block groups. These data are based on the 2000 Census, and they show that both reservations' poverty rates are higher than both the immediately surrounding block groups as well as the state average. For the Lower Sioux reservation, the poverty rate is 9.8 percent, which was just slightly higher than the state average. Additionally, most surrounding block groups fall below the state average, suggesting that poverty is more severe on the reservation than in the surrounding area. This is particularly interesting considering that Lower Sioux's median household income is much higher than those of surrounding block groups (See Figure 3.4). This presents somewhat of a paradox, perhaps suggesting uneven distribution of incomes among Lower Sioux residents.

According to the data, poverty is significantly less severe on the Lower Sioux reservation than on the Upper Sioux reservation. For the Upper Sioux, the poverty rate is 38.6 percent, which is among the highest values in the map extent. This rate is over three times the poverty rate in Yellow Medicine County (10.6 percent) and over four times the poverty rate for Minnesota as a whole (7.9 percent). The map shows that all block groups immediately surrounding the reservation have lower poverty rates, highlighting the severity of poverty on the reservation. Unlike the poverty rate for the Lower Sioux, the poverty rate for the Upper Sioux corresponds logically with the reservation's low median income (See Figure 3.6).

ADDITIONAL MAPS

TOURISM

Tourism is an increasingly important strategy of development for rural areas and is thus a notable sector for potential economic growth for the reservations. Figure 3.6 demonstrates amenities and attractions in the region and shows that a tourism market in the region has to some degree already been established. It also shows opportunity for connectivity between existing tourism infrastructure that the Upper Sioux and Lower Sioux communities could utilize in continuing to develop tourism. This section will explore two (of the many possible) resources that could be used to further develop tourism: natural amenities and agriculture.

Rural areas in America have experienced much economic and demographic change in recent years. Many people assume that rural areas are facing economic decline and depopulation. Krugman argues that the rural location is traditionally thought of as being advantageous for agriculture, but transportation costs in areas with low connectivity to urban areas make other forms of production untenable as a method for economic development (1993). This is not entirely accurate; over the last century, there has been a remarkable decline in the rate of employment from agriculture, but growth in producer services and manufacturing (McGranahan 2003). Perhaps the greatest growth has come in

the service sector (McGranahan 2003). However, areas relying on extraction of natural resources and agriculture have, in many cases, suffered economic losses (McGranahan 2003). Much of the service sector growth has come from the growing trend of rural amenities based tourism (McCarthy 2008). As well, population and demographic trends have been varied among rural communities and overall rural America has experienced population growth (Johnson, et al 2005). This economic and demographic diversity across rural communities make focusing any economic development strategy on the specific needs and nature of a rural community important. Rural tourism is one potential area of economic development occurring nationwide that could be developed for the Upper Sioux and Lower Sioux communities.

Many farms looking for a way to augment their income have begun to introduce tourism services to attract a portion of the 62 million Americans that visited farm operations in 2000 (Carpio, Wohlgenant and Boonsaeng 2008). As well, unlike many other development opportunities, the rural location serves as an amenity, or locational advantage, for agrotourism. Rural landscapes can be beneficial for a tourism economy because their “amenities include wildlife habitats, open spaces, aesthetic scenery and cultural preservation” (Carpio, Wohlgenant and Boonsaeng 2008). Many of these assets may also provide an opportunity to make environmental and cultural preservation values an important element of economic development.

Another potential site for tourist development is in utilizing natural amenities. Potential natural amenities located near the two communities include, but are not limited to, the Minnesota River, the Upper Sioux Agency State Park, and the prairie landscape setting of the reservations. Among the natural amenities that benefit from development are winter sports, such as cross-country skiing. Research on 2,243 rural counties in the U.S. indicates that developing ski paths through non-homogeneous landscapes (such as through forest or along lakes) can be a good way to attract tourist development, especially in areas with more than 24 inches of annual snow fall (Deller, et al, 2001). The region has enough snowfall to access this seasonal amenity; Yellow Medicine County averages 41.2 inches of annual snow fall (Yellow Medicine County, 2010). Therefore, utilizing forested areas and the Minnesota River may provide an opportunity to create a varied and attractive situation for cross-country skiing on or around the reservations. The primary site for cross-country skiing in the region is the Upper Sioux Agency State Park. As well, areas that tend to be most successful at tourist development have dedicated amusement places (defined as places whose primary business is amusement in orientation), created tourism and amusement agencies, golf courses and tennis courts; conversely, parks, fair grounds, swimming pools, and recreation centers do not seem to significantly contribute to a tourist economy (Deller, et al, 2001). Figure 2.6 shows that there is already a base of golf courses, amusement attractions, and lodging currently in the region, which could serve as a base for tourist development. As well, water amenities serve as a predictor for successful tourism development. Areas with fishing, rafting/canoeing outfitters, guides, and rivers (and to a greater degree, lakes) have empirically had success in developing their tourism (Deller, et al, 2001). Thus, river development could be a mechanism for attracting tourism dollars.

We can see in Figure 3.6 that the development base for a tourist economy is established. The Upper Sioux and Lower Sioux communities could utilize this base to become a site of amenity tourist development to bring more new money into the reservation and improve the economic situation.

Figure 3.5: Present below poverty, 2000

Percent Below Poverty – 2000

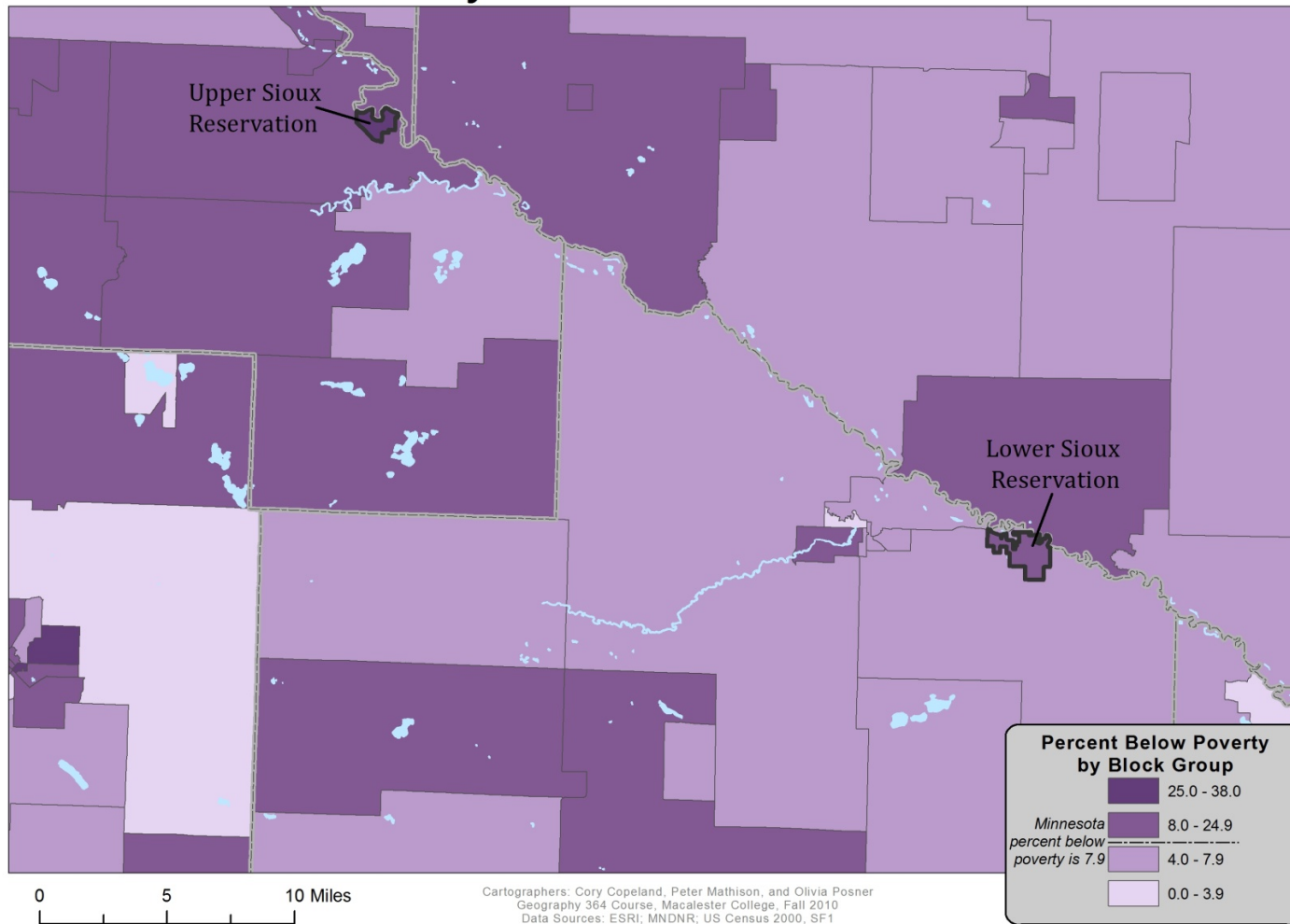
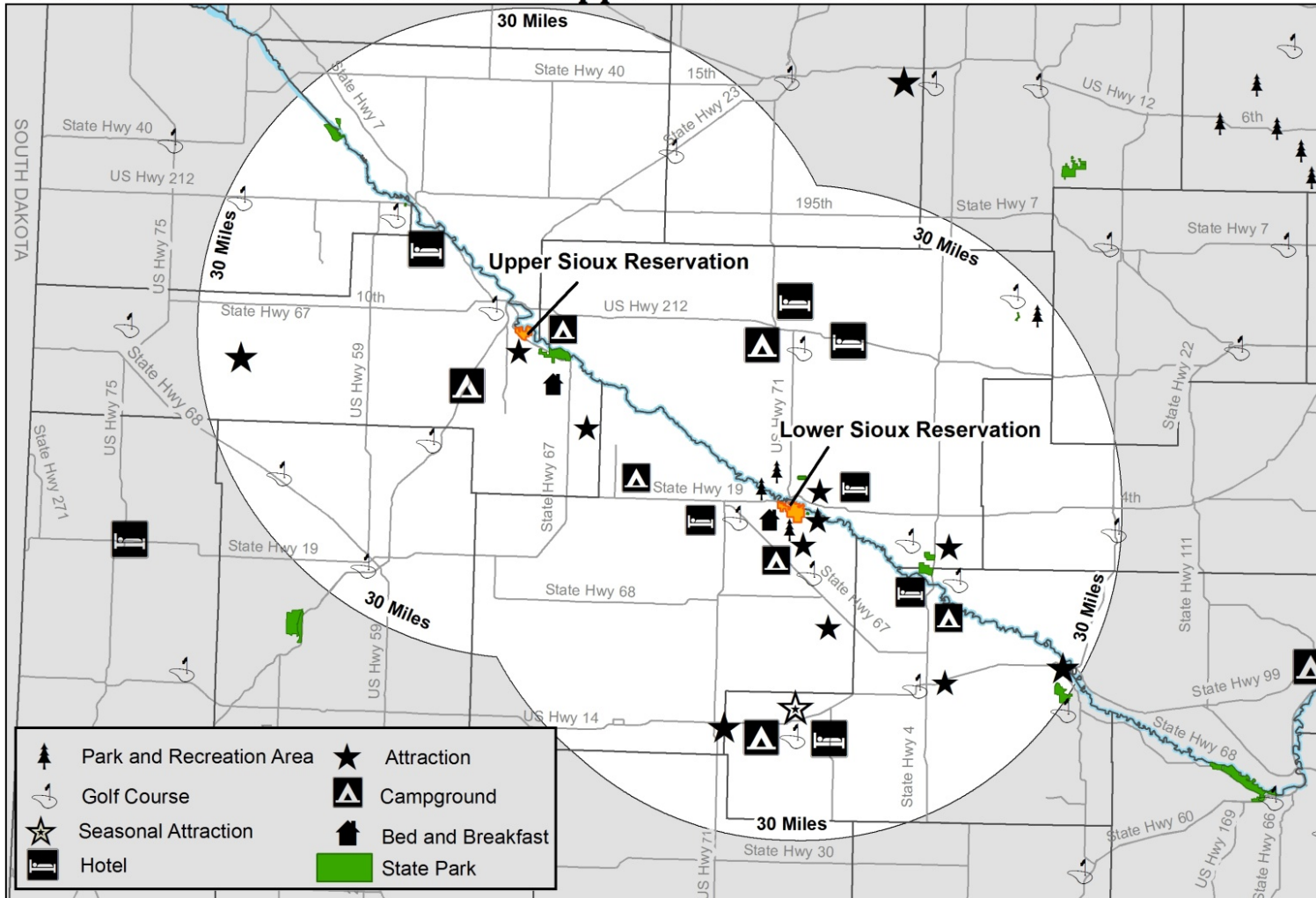


Figure 3.6: Tourism

Tourist Establishments Near the Upper and Lower Sioux Reservations



Cartographers: Cory Copeland, Peter Mathison, Olivia Posner; Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI, Brian Schulte 2007, MN Bureau of Tourism 2010, MN DNR

0 5 10 20 Miles

INDIAN TRUST LAND - LOWER SIOUX RESERVATION

Figure 3.7 depicts American Indian trust land vs. non-trust land within and surrounding the Lower Sioux reservation as of 2008. The map was created using publicly available plat maps from the Bureau of Land Management, and trust status is portrayed for squares of forty acres in area (known as “forties”). As can be seen, trust land patterns in the map area are relatively straightforward. Trust land is limited to the reservation boundaries; that is, there is no off-reservation trust land. Furthermore, all land within the reservation boundaries has trust status. This differs significantly from other reservations in the state, in which tenure status varies substantially within reservation boundaries. The relative simplicity of the land tenure pattern on the Lower Sioux Reservation is likely a partial result of the small size of the reservation as well as the fact that Dakota reservations in the state of Minnesota did not undergo the allotment process (Smith 2004).

LAND TENURE - LOWER SIOUX RESERVATION

As with the trust land/non-trust land map, Figure 3.8 was created using a 2008 plat map for the source of tenure data. This map differs from the last map primarily in the level of detail of tenure categories. Whereas in Figure 3.7, tenure status was divided into “trust” and “non-trust” categories, in this map, ownership categories are more specific. While “American Indian Trust land” remains an ownership category on this map, other ownership categories in the mapped area include state ownership, private ownership and “American Indian Fee land”. The vast majority of non-trust land depicted in Figure 3.8 is owned privately, and is not affiliated with the reservation. A small section of land in the southeastern corner of the map is categorized as “American Indian Fee land”, meaning that it does not have trust status but is owned by the Lower Sioux Indian Community. Beyond these categories, land owned by the state of Minnesota appears in relatively small areas on the map.

Figure 3.7: Indian Trust Land – Lower Sioux Reservation

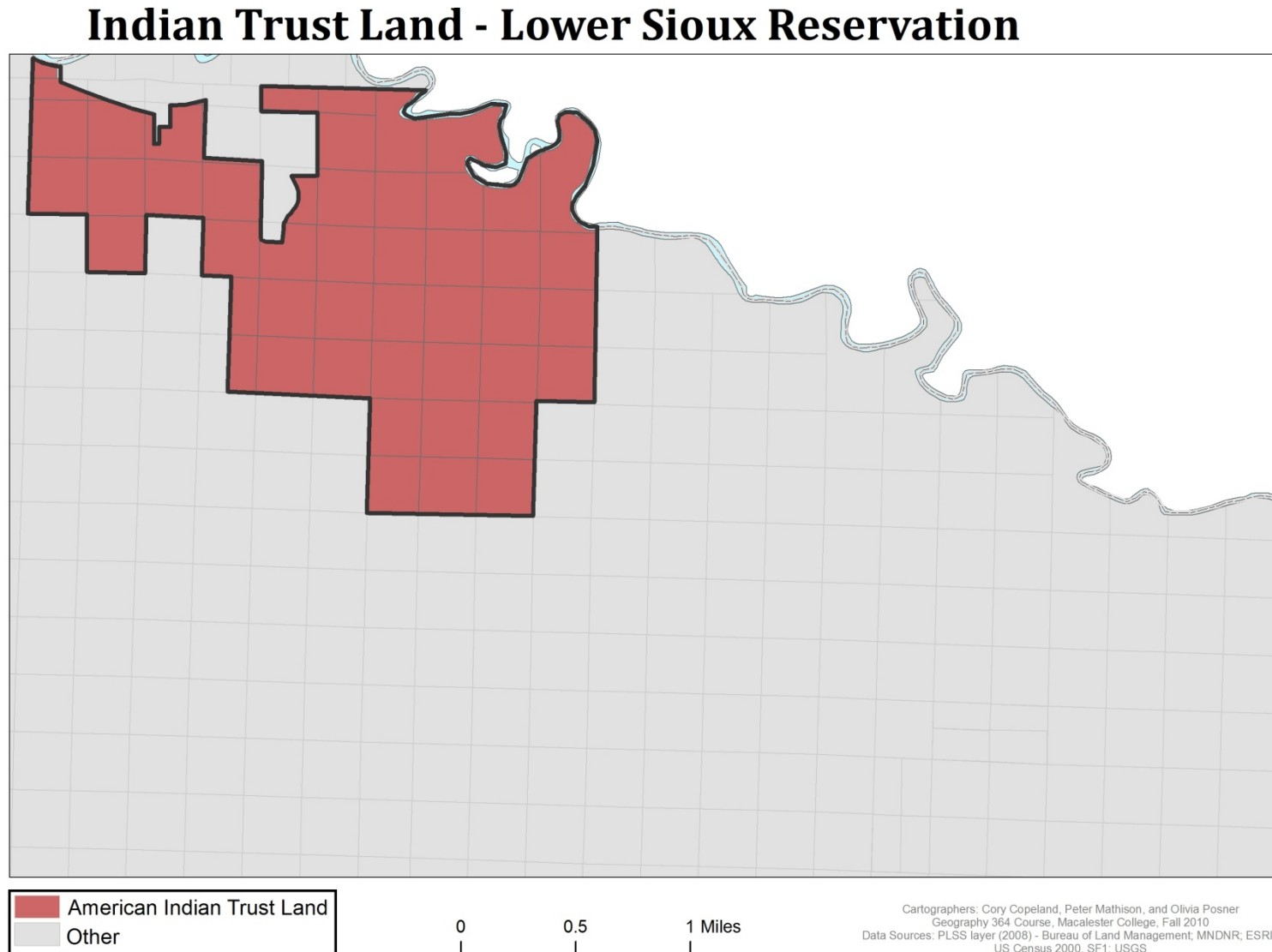
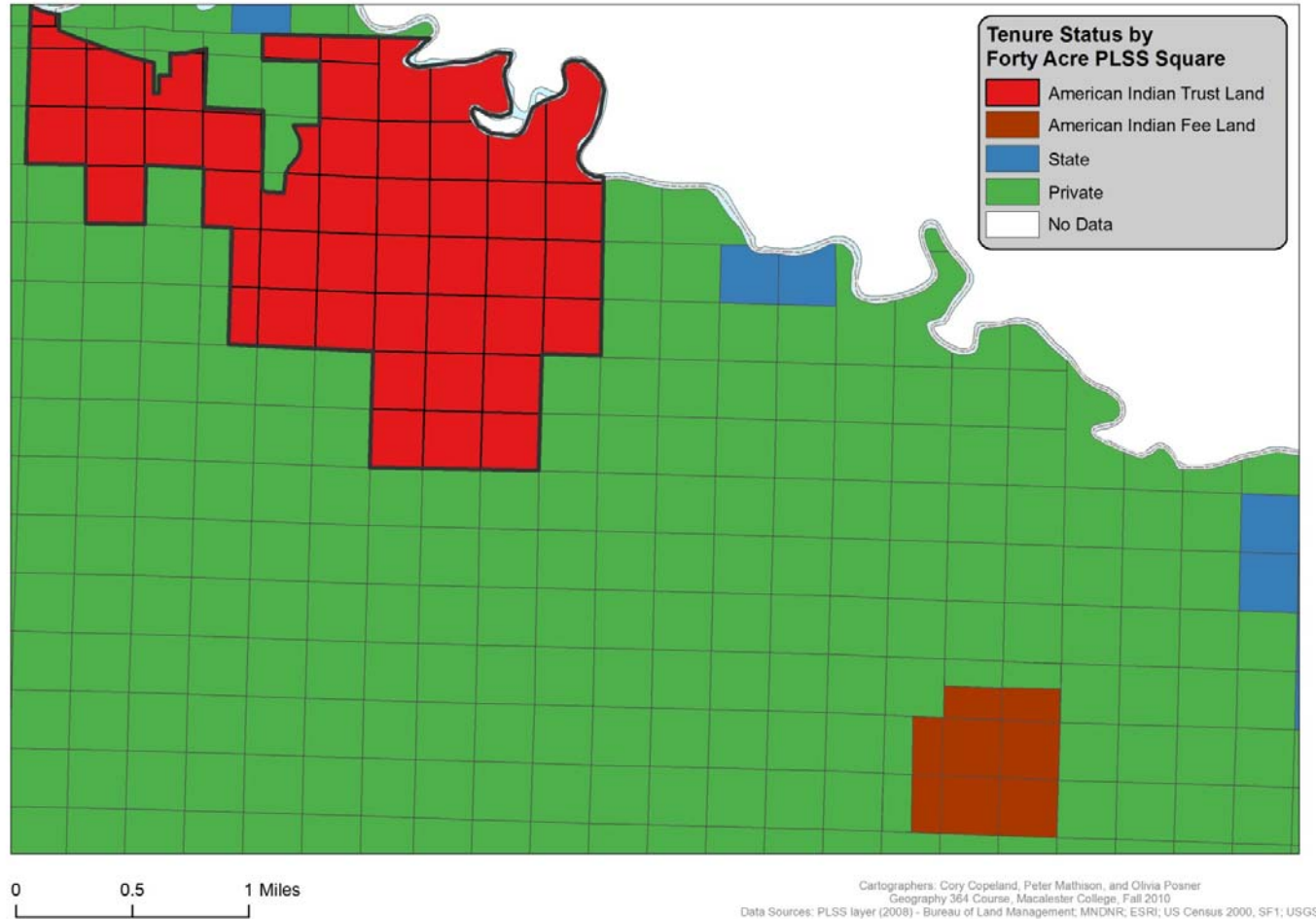


Figure 3.8: Indian Trust Land – Upper Sioux Reservation

Land Tenure - Lower Sioux Reservation



INDIAN TRUST LAND – UPPER SIOUX RESERVATION

Figure 3.9 depicts American Indian trust land vs. non-trust land within and surrounding the Upper Sioux Reservation as of 2007. The map was created using 2007 land parcel ownership data from Yellow Medicine County. As with Figure 3.7, the trust land patterns displayed in this map are largely straightforward. Trust parcels are limited to those within or bounding 2007 reservation boundaries (which were provided by the reservation itself). The vast majority of parcels within reservation boundaries are held in trust, although the county parcel data does show a few parcels within or crossing reservation boundaries as not having trust status. Based on the shapes of these parcels, it would appear possible that they are public right-of-ways.

LAND TENURE – UPPER SIOUX RESERVATION

As with the trust vs. non trust map for Upper Sioux, Figure 3.10 was created using parcel ownership data from Yellow Medicine County. As with series of tenure maps depicting the Lower Sioux reservation, the main difference between this map and the Upper Sioux trust status/non trust status map is the level of detail given for ownership of non-trust land. Trust land marks the same parcels here as it does in Figure 3.9; however, all other non-trust parcels have been given one of the following descriptors: “State”, “Municipality”, “Corporate”, “Private”, or “American Indian Private land”. The area surrounding Upper Sioux is dominated by “Private” land. Unlike Map 8, however, several other tenure types are present within the map extent. Located to the southwest of the main reservation area are two parcels held privately by the Upper Sioux Indian Community, meaning that they are not held in trust. According to the tribe, these are relatively recent acquisitions (within the last three years). The map also highlights “Corporate” land in the area (southwestern corner of the map).

Figure 3.9: Indian Trust Land – Upper Sioux Reservation

Indian Trust Land - Upper Sioux Reservation (2008)

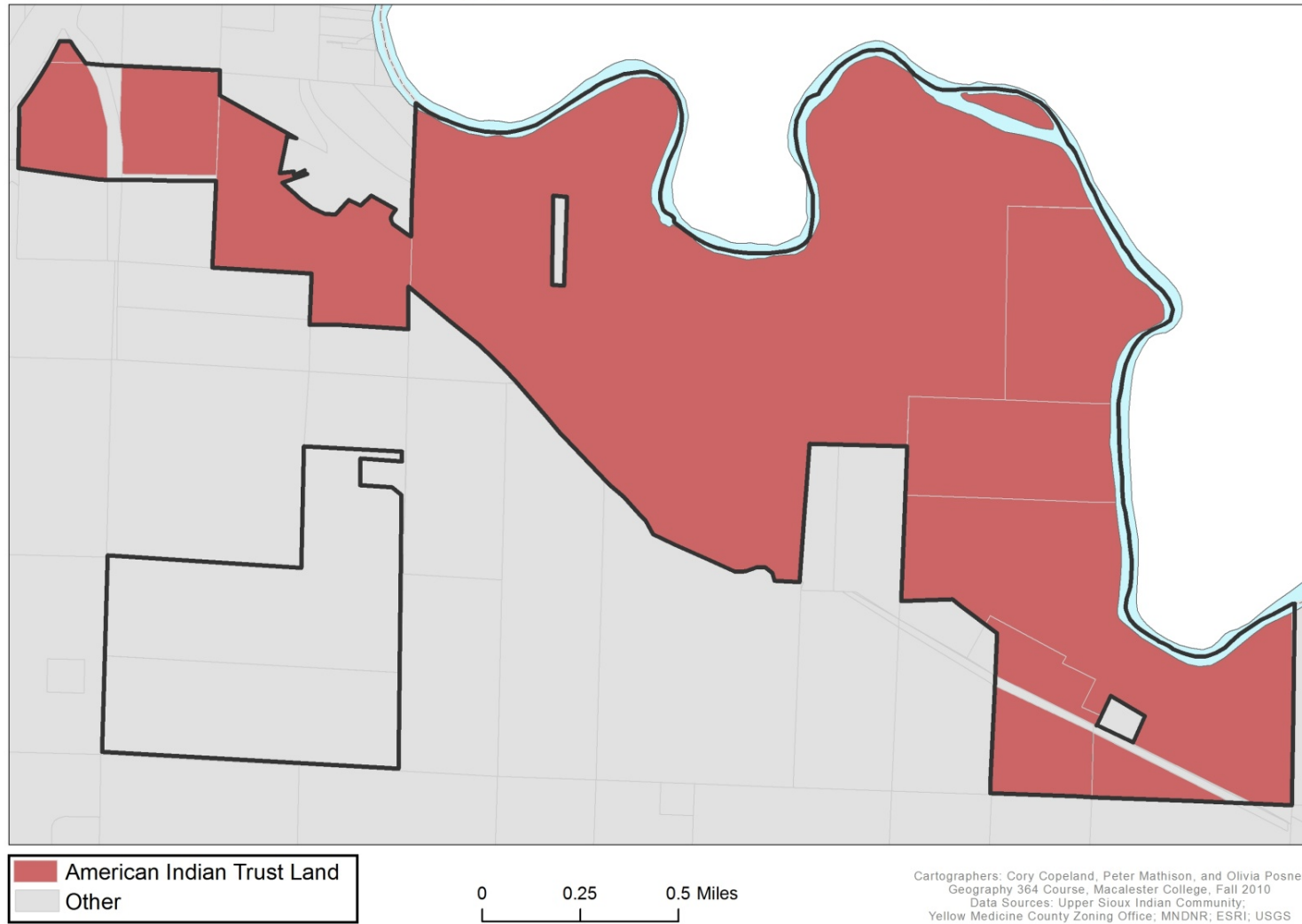


Figure 3.10: Land Tenure – Upper Sioux Reservation

Land Tenure - Upper Sioux Reservation



CONCLUSION

The land tenure situation of Upper Sioux and Lower Sioux communities is positive compared to many of the reservations in Minnesota. Both reservations hold most of their reservation land in trust. Having achieved the goal of maintaining reservation land in trust status, the communities could benefit from looking at ways to utilize their land to develop a thriving economy while preserving their landscape and cultural values. Both reservations suffer from poverty rates above the Minnesota average and above the surrounding communities (Figure 3.5). Although the Lower Sioux reservation community has achieved a relatively high median income (possibly due to the success of the Jackpot Junction Casino), the Upper Sioux reservation community has been less successful in regards to median income (Figure 3.4). Both communities could benefit from economic development in order to address poverty in the communities and to provide opportunities for members and an inflow of cash. This section will discuss some of the limitations to economic development faced by the communities and then some potential development opportunities to explore.

One of the major limitations to economic development faced by the Upper Sioux and Lower Sioux communities is the lack of economic connectivity to the Twin Cities (the largest regional economic hub). This limitation can be partially mitigated by utilizing site advantages (such as natural amenities) rather than location advantages in development. Another limitation is difficulty of locating retail shopping in areas of low population density. The primary way of addressing this concern is to find a way to bring consumers from outside the region. One way the Upper Sioux and Lower Sioux communities could potentially achieve this goal is by bringing in tourists whose money could support a retail sector. As well, some instances of connecting retail shopping to casinos have been successful (Gazel 1998, 70) which is an idea worth exploring. Still, caution should be taken in building a local economy that is too reliant on gaming or tourism. Ranjana G. Madhusudhan explains how fluctuations in the economy making gaming revenues cyclical and capable of suffering from regional economic downturns:

Gaming revenues, particularly casino revenues, have been unstable and appear to be cyclically sensitive as well. The casino industry, for instance, was adversely affected during the national recession years in the eighties and nineties, when the Northeast region took a big hit. This is clearly reflected by the wide fluctuations in the annual percentage change in casino revenues during this period. (Madhusudhan 1996, 407)

The inherently cyclical nature of casinos should not be taken as a reason to distance economic development from the casinos, but rather should be taken as a call to find ways to diversify the economy so that the economic health of the community does not fluctuate with the health of the gaming industry. Therefore, exploring ways to grow the tourism industry could benefit the overall economic situation for the Upper Sioux and Lower Sioux communities.

Using the natural amenities in the Upper Sioux and Lower Sioux reservation areas, the communities could develop greater tourist amenities. Some potential areas to explore include winter sports (particularly cross-country skiing), utilizing the Minnesota River, and

investing in amenities infrastructure that attracts tourists. As well, the growing demand for agro-tourism could be taken advantage of to build a regional tourism economy that could benefit the both communities. Therefore, national tourism trends and the situational advantages of the reservation areas make rural and amenities tourism opportunities that could be explored more in depth by the tribal governments and local actors. Finding ways to diversify the economy on the reservations would help shield against fluctuations in the existing industries on the reservation. As well, developing a tourism industry (and most other industry) might benefit from economic partnerships with the political and economic agents in the region. The economic isolation of the reservations is not unlike that faced by many rural communities throughout the Great Plains and upper Midwest. Finding beneficial partnerships and creative ideas to develop a thriving economy in the region is one potential strategy to consider.

Both the Upper Sioux and Lower Sioux communities have had a turbulent history in regards to land acquisition, tenure, and community relations. Still, relatively recent reacquisition and expansion of land in trust have represented successes with respect to the land tenure issue. Poverty is still a problem on the reservations and the pursuit of economic diversity could serve as an opportunity to work with the southwestern Minnesota counties towards improving these measures. Despite limitations to economic development, further exploration into new markets such as tourism could produce a thriving and diverse economy for the members of the Upper Sioux and Lower Sioux communities.

4

MILLE LACS

INTRODUCTION

HISTORY

The Mille Lacs Band of Ojibwe reservation is located in east-central Minnesota within Mille Lacs County. The band has resided in this area since the mid- 1700s. During that period their livelihoods included hunting game, and gathering wild plant products. However, these activities changed with the introduction of new diseases and new federal policies. Some of the more important policies influencing changes in land tenure and livelihood strategies include: the Treaty of 1837, the Treaty of 1855, the General Allotment Act of 1887, the Treaty of 1864, and the Nelson Act. To this day, the effects of these treaties are still being felt by the tribes. This chapter will map and discuss land tenure issues and socio-economic patterns (Mille Lacs Band of Ojibwe).

POLICIES AFFECTING LAND TENURE

The Treaty of 1837 was the first of many significant land claims disputes between the tribe and the United States government. Due to a lack of well-drawn maps, this treaty led to the ceding of much of Mille Lacs territory to the U.S. government. Despite this miscommunication, the Mille Lacs band still retained some rights to this ceded landscape; Indians from the tribe are allowed to collect wild rice and game (Mille Lacs Messenger).

The Treaty of 1855 (the General Allotment Act of 1887) created the reservation boundary which encompasses 61,000 acres of land surrounding Mille Lacs Lake. At present, Mille Lacs County does not acknowledge this boundary due to claims of harm to the county's economic development (Mille Lacs Messenger).

The Treaty of 1864 was an agreement made between the United States and Mille Lacs band to abstain from forcing the Indian population off the reservation. This treaty was not respected. In 1879 the U.S. Department of the Interior allowed the purchasing of land within the reservation. Congress later reversed the Treaty of 1864; however, the Mille Lacs band was unable to reacquire the land before timber interests stripped the landscape of trees and other biodiversity or before squatters began inhabiting the landscape (Mille Lacs Band of Ojibwe).

The intent of the Nelson Act of 1889 was to move the Mille Lacs Band to the White Earth Reservation. The aim was to centralize the Indian population and consolidate the reservation lands within Minnesota. However, the Nelson Act was in direct violation of the prior treaties made with the United States government and was thus overturned. Much of

the Mille Lacs Band broke up at this point in history, as families within the community moved away from their homes. Some key members of the tribal band maintained their political claim to the landscape though. Among these individuals were Chief Wadena and Chief Migizi.

Based on the history of the region and relationships between Indian nations and the U.S. government, there were and are many challenges to Indian sovereignty within the Mille Lacs reservation. Issues such as infrastructure development, economic prosperity, and checkerboarding reflect on the poor relationship between Mille Lacs Band, the county, and the national governmental offices. One example of the poor relationship between the tribe and the local county is the dismissal of territorial boundaries, in light of the national pact made with the tribe. At present, territorial land claims are still being challenged. At present the county assessor even dismisses claims of territorial boundaries (Mille Lacs Messenger).

Through the following maps, we seek to show how land tenure issues such as checkerboarding have resulted in loss of cultural history, loss of lands that provide resources, loss of true ownership (non-fee simple), as well as social hardships for the Indian population that resides within the Mille Lacs reservation. We begin this chapter by showing the situation of the Mille Lacs Band of Ojibwe Reservation within Minnesota with our reference map. We will then proceed to outline land tenure issues that exist within the Mille Lacs reservation. Using this framework of the land, we will present the various types of land use and land cover on the reservation. Lastly, we observe the socio-economic characteristics of the population through the measures of population density, race, median household income, and poverty status as well as locations of businesses owned by the band or band members. We will then conclude this chapter with a statement about how land tenure issues continue to affect the trust relationship that the band has with the United States government.

MAPS AND MAP ANALYSIS

In this first part of the chapter, each map will be preceded by a general description of and observations from the map. We will then use these observations and draw in further analysis as to what is happening on the landscape, and how they reflect the undermined trust relationship between Mille Lacs Band and Mille Lacs County.

REFERENCE MAP

Mille Lacs County is located in east-central Minnesota approximately one hundred miles north of the Twin Cities. The Mille Lacs reservation is broken into three districts. For this project we focused on districts one and two where the majority of American Indian owned land is located. Mille Lacs reservation mainly lies within Mille Lacs County and is located on the northern boundaries of Mille Lacs County. One signature feature of the reservation is its location at the southern end of Lake Mille Lakes. Within the reservation boundary lie several major cities such as Vineland, Onamia, Wahkon, and Isle all of which have a

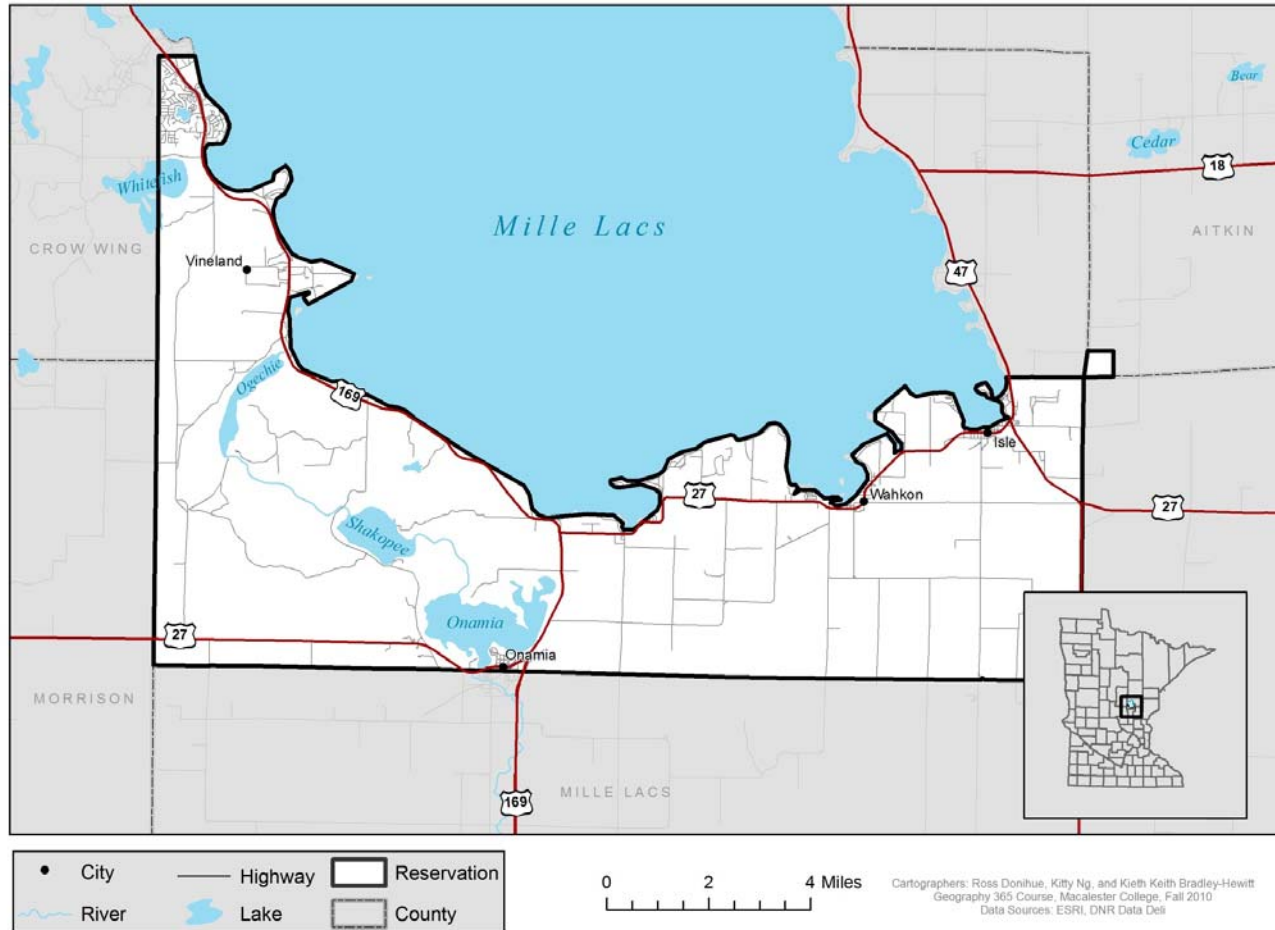
population below one thousand people. Highways 169, 27, and 47 make Mille Lacs reservation very accessible. In particular, highway 169 is the most direct route from the Twin Cities to this region and extends through the reservation to the north.

Mille Lacs County Highway Department plays a critical role in determining the upkeep of highways within Mille Lacs County. Highways are critical to the tourism industry as well as facilitating communication within the county. Transportation routes in Mille Lacs Reservation are clustered around water features. This observation is logical in that Mille Lacs Lake is a large feature of nature tourism. In contrast, roads within the reservation, or those that cross through the reservation, are much less developed. Lack of infrastructure could impede the tribe's ability to bring in tourism and the economic benefits that tourism might bring.

This reference map was created to show where the reservation is located in Minnesota, the main reference features within the reservation, and to provide a framework for the maps and analysis to follow (see Figure 4.1).

Figure 4.1: Mille Lacs Reference Map

Mille Lacs Reservation



LAND TENURE SERIES

This series of maps highlights the issues of land tenure within the reservation boundaries such as checkerboarding, weak trust relationships, and ineffective land management over the landscape. This series will consist of four maps including a Land Tenure map, an Indian Trust Land map, an Indian Ownership focus area map, and an American Indian Ownership Through Time map.

LAND TENURE - MILLE LACS RESERVATION

In Figure 4.2, we can see the varied ownership over the landscape within the reservation boundaries. In this map, one of the largest trends is that the ownership is mostly private followed by state interests. Within the reservation approximately 24 percent of the land is in Indian Ownership with 17 percent in Fee and 7 percent in Trust. An interesting feature of the Indian-owned land is that the large contiguous ownership of land actually lies right outside of the reservation boundaries. In addition, there are other land owners within the reservation, such as the municipality and forfeited lands.

The most prevalent land tenure issue illustrated in this map is the degree of checkerboarding within the reservation. Because of the tumultuous history over the landscape between the Mille Lacs band and Mille Lacs County, the landscape has broken up and mixed the ownership patterns away from Indian interests. Checkerboarding is a critical land tenure issue to Mille Lacs Band due to the need for land in order to promote socio-economic development. Without large contiguous land ownership within the reservation, the efficiency of communication as well as socio-economic development cannot best serve the Indian population. As such, the increased awareness of checkerboarding is critical in furthering socio-economic development within the reservation.

INDIAN TRUST LAND

Figure 4.3 shows the Indian trust land ownership within the reservation. A large cluster of Indian trust land surrounds the city of Vineland. However, it is not a contiguous land ownership; it is broken up by other interest groups.

Trust land is land that the Mille Lacs band owns, without having to pay taxes. Trust land is critical to the sovereignty of the Mille Lacs band in that it establishes a cultural unity through political jurisdiction. Being able to claim the land is a strong representation of the trust-relationship that the Mille Lacs band has with the United States government. However, the Indian trust lands are comparably smaller when taking into consideration the larger scope of the Mille Lacs reservation. As such, we must recognize that the trust-relationship between the United States and Mille Lacs band is weak, and that the political challenges in claiming land ownership has broader implications across Indian livelihoods.

Figure 4.2: Land Tenure-Mille Lacs Reservation

Land Tenure - Mille Lacs Reservation

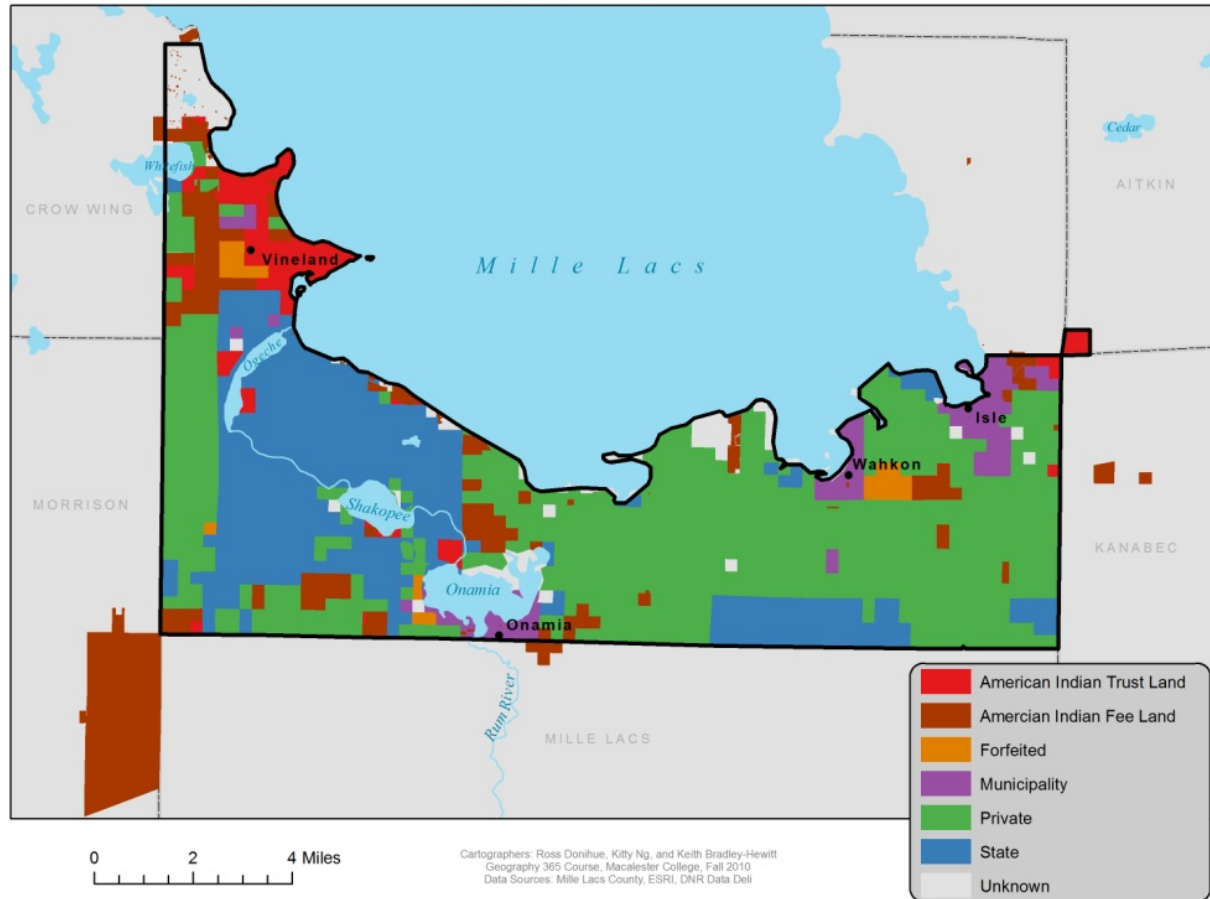
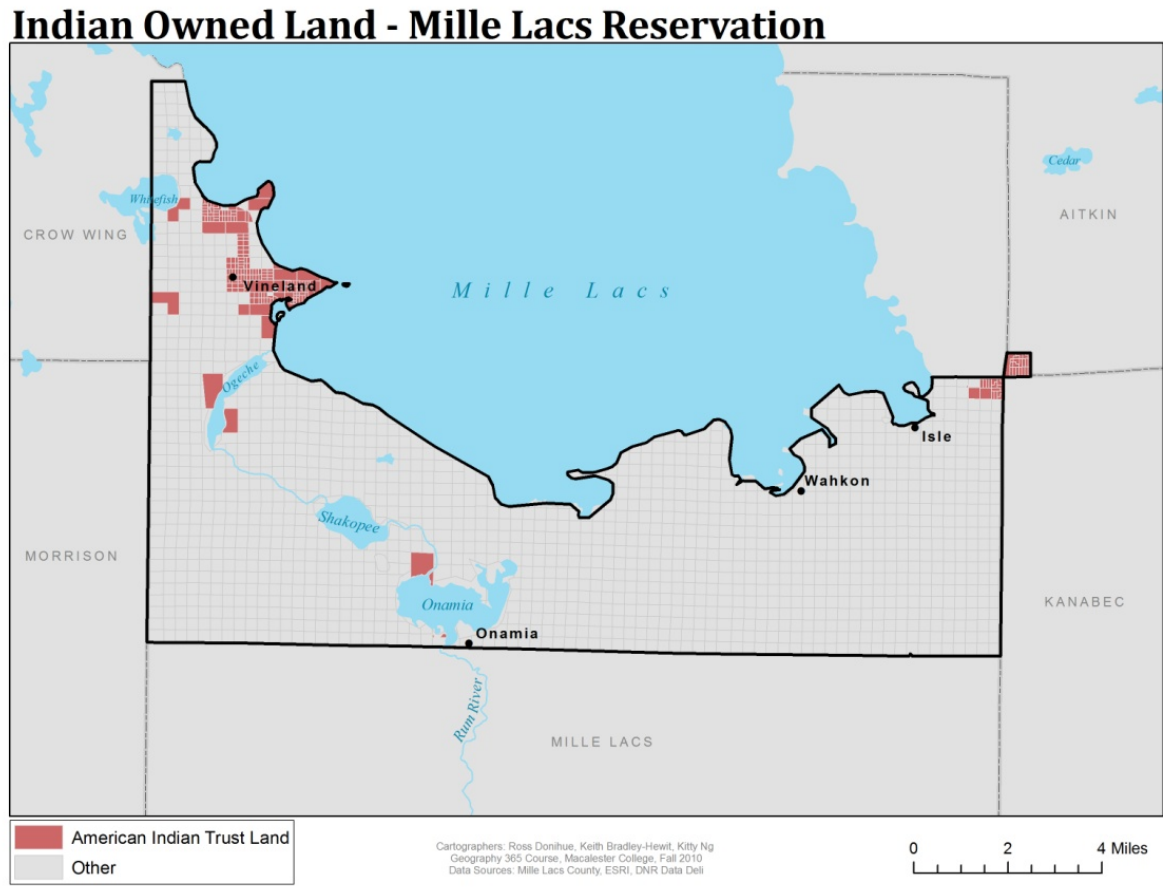


Figure 4.3: Land Tenure - Indian Trust Land



AMERICAN INDIAN OWNERSHIP FOCUS AREA

Figure 4.4 shows a zoomed-in perspective of the Vineland area land ownership patterns. We differentiated the Indian ownership patterns with regard to trust land, fee land, and allotted land. Some patterns include the higher trust land ownership on the eastern side of Vineland, in comparison to the higher fee land ownership on the western side of Vineland. In addition, the allotted lands are scattered throughout, but are all smaller than a 40 by 40 acre plot.

We can see from this map that there is definitely a push for acquiring lands closer to the waterfront due to the waterfront serving as a social and an economic feature for Mille Lacs Band. However, in contrast, the fee land is predominantly away from the waterfront. This scattering of land ownership types under Indian control however, creates ineffective land management.

As a whole, this mini-series of land tenure issues runs on multiple scales. Checkerboarding, weak trust relationships with the US government and ineffective land management are not subject to these maps solely. The issues must be seen as a collective problem on multiple scales in order to move land tenure issues to the forefront of Indian land acquisition.

AMERICAN INDIAN OWNED LAND THROUGH TIME

Figure 4.5 shows American Indian land acquisition over time. Between the years of 1915-1990 there were approximately 4,265 acres of land in American Indian Ownership. This was land that was acquired through allotments, purchases and other means. From 1991 to 2010 the tribe has acquired an additional 11,531 acres of land. This dramatic increase in land can be explained in part because of the construction of casinos by the tribe due to the 1988 the Federal Indian Gaming Regulatory Act. The tribe was able to take advantage of this opportunity and use the revenue to help in reacquisition efforts.

The Mille Lacs Band opened Grand Casino Mille Lacs and Grand Casino Hinckley in 1991 and 1992. This has given added revenue and income to the tribe to reacquire land. The areas shown in yellow on the map represent parcels obtained before 1945, lands that were obtained from 1945-1990 are shown in orange, and lands that were obtained after 1990-2010 in red. In particular we can now visualize how many acres of land have been obtained through these three periods of time. Also we can see that the majority of lands were obtained in the most recent period of time while the least number of lands were obtained from 1915-1945. Indian-owned lands have changed significantly since the construction of the two band owned casinos by the reservation. While there are other factors involved in the reacquisition of lands besides the advent of the casinos, it is without a doubt that these two businesses have increased the wealth of the Tribe and has been able to aid in the reacquisition efforts significantly.

Figure 4.4: Land Tenure – American Indian Ownership Focus Area

Indian Owned Land - Mille Lacs Reservation

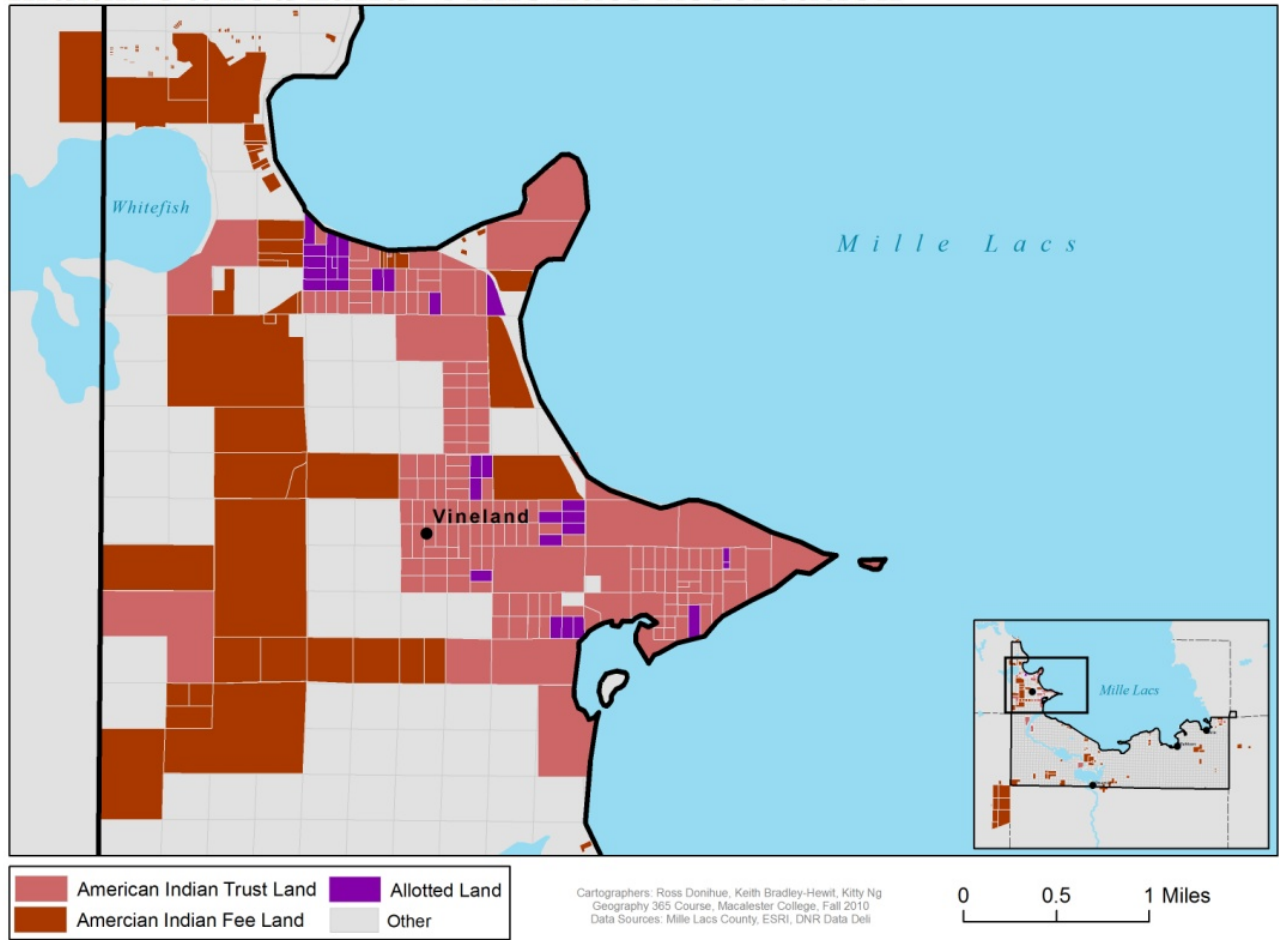
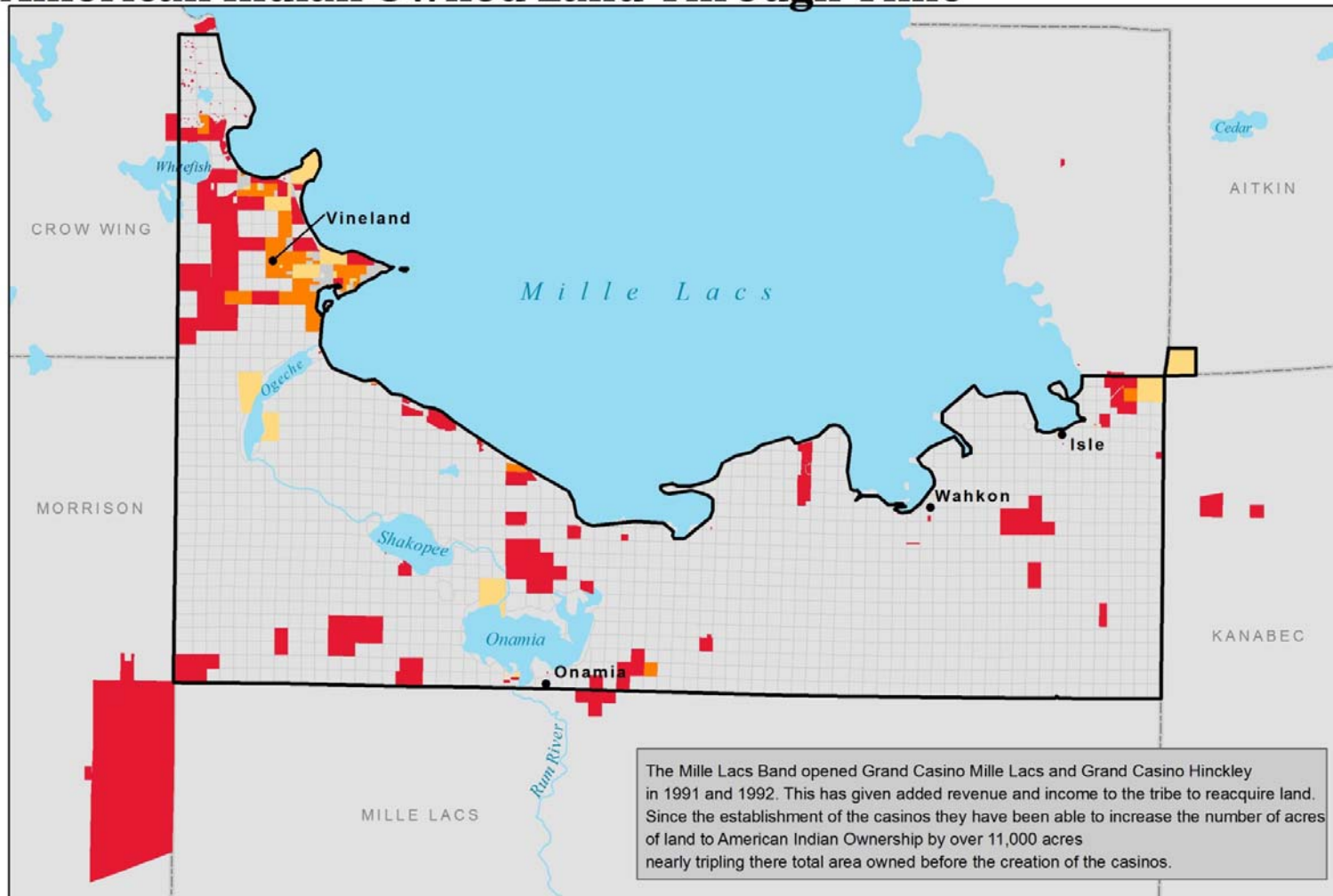


Figure 4.5: American Indian Owned Land through Time

American Indian Owned Land Through Time



RESOURCE DISTRIBUTION MINI-SERIES

This mini-series will show how resource distribution is divided over the landscape within the Mille Lacs reservation as well as the landscape of the tribal lands. Through this mini-series, we hope that you will be able to understand the issues of resource access as well as understand the landscape a bit through an environmental lens.

RESOURCE DISTRIBUTION - MILLE LACS RESERVATION

Mille Lacs reservation is located on the southern shore of Minnesota's second largest lake (millelacs.com/lake.htm). Much of this land is covered with forests. This forest cover has led to the creation of the Kathio State Park within the reservation territory on the south western shore of Lake Mille Lacs. The second largest land cover is grasslands, which lays south and east of Lake Mille Lacs. Wetlands also contribute to the stability of the ecosystem within the reservation, as well as at the state level. Other resources include gravel pits and mines.

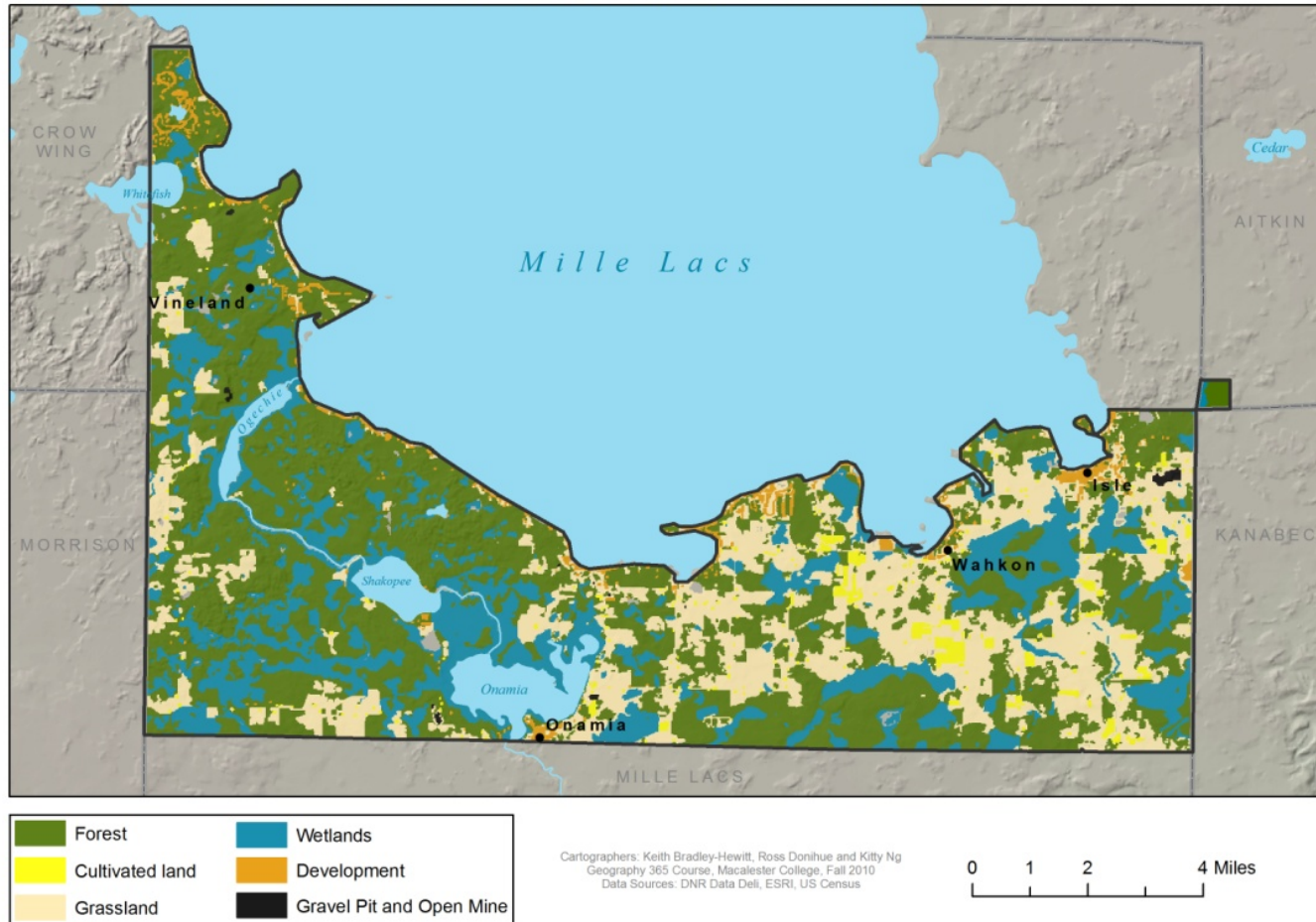
Resource distribution is a critical point of analysis for understanding land tenure and potential economic resource rights. Within Mille Lacs, there are many forms of biodiversity protection measures, including Kathio State Park, which spans 10,585 acres and includes Lake Ogechie within its borders (dnr.state.mn.us/index.html). This park is critical in serving to preserve the biodiversity wildlife and plant life in the area. In addition, this park also serves as a featured area of touristic value. With the combination of environmentally conscious and economic opportunities that Kathio State Park provides, the longevity of the state park serves many purposes that aid in the quality of life that Mille Lacs band may enjoy.

In contrast, the large areas of grasslands are all cultivated due to the introduction of a dam flooding out much of the previous lands used to grow wild rice. Prior to the 1950s, wild rice production made up a significant portion of land use by Mille Lacs Band. Through the introduction of the dam, the cultivable land resources that belong to the Band have been impeded on, due to flooding as well as privatization of the landscape by non-Indian ownership. There are efforts being made today to restore this landscape so as to encourage wild rice production again in this region through modifications made to the Buckmore Dam (indiancountrytoday.com).

Another critical land cover that spans much of the reservation is wetlands. Wetlands are critical to the environment because they act as carbon sinks and regulate water flow. As we move forward into an age where global warming is becoming a more alarming issue, we must recognize that wetlands serve many purposes in the effort to minimize detrimental effects associated with climate change. For these reasons, it is critical that wetlands be maintained.

Figure 4.6: Resource Distribution- Mille Lacs Reservation

Resource Distribution - Mille Lacs Reservation



RESOURCE DISTRIBUTION – INDIAN-OWNED LAND

Land in the Mille Lacs Reservation region is largely covered by forest, water, grassland, or wetlands. Much of the area is well-suited for environmentally-based tourist activities, which contribute greatly to the development of the reservation area. One of these activities that many tourists participate in is open-water and ice fishing. As a whole, the lakes within Mille Lacs territory all carry ample population of Muskie, Northern Pike, Jumbo Perch, Small-Mouth Bass and Tubilee fish species. However, the most prized fish is the Walleye, whose annual egg hatch ranges in the billions. In order to maintain this economy, spawning for the walleye must be maintained so as to create the ideal environment for reproduction.

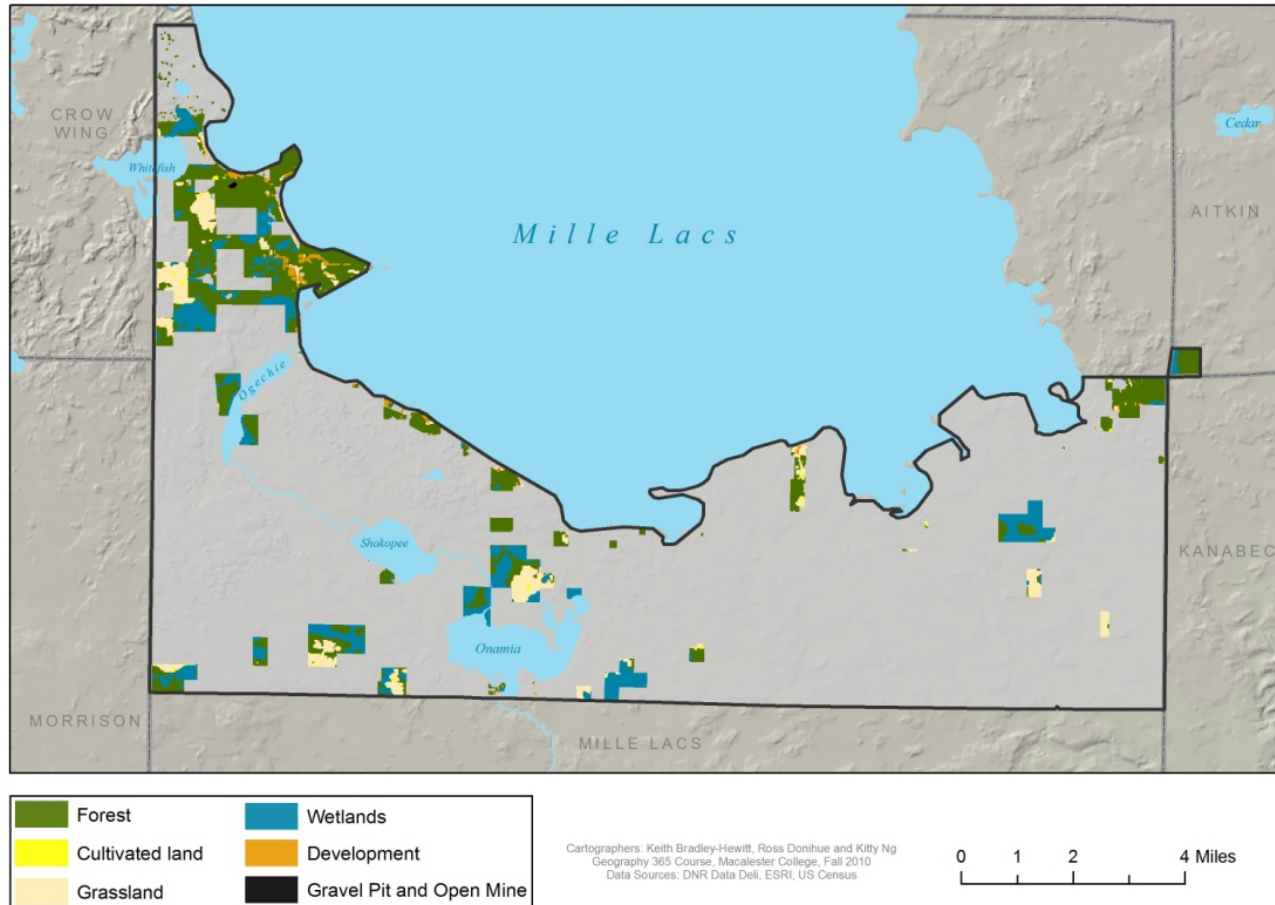
Healthy environments for fish must be created in a holistic manner: through a conscientious care of the lands around the lakes by both locals as well as the transient tourist population. Tourism for fishing in Mille Lacs occurs year round, and environmental efforts must be vigilant all year. However, transient tourists have little care for the landscape and tend to over-fish, litter, and pollute the lake.

Other constraints include the limited opportunity for lake shore development. If further development occurs in the area, the ecosystem would be further traumatized and would not be as successful in maintaining fishing tourism as a feasible economic industry. Thus, we suggest that, should there be further economic opportunities that require severe ecosystem changes; development should be further removed from the direct vicinity of the lake shore.

Lastly, gravel pits and mines make up a small portion of the reservation land. These mines are distributed throughout the whole region and are not confined to a single area.

Figure 4.7: Resource Distribution - Indian-owned land

Resource Distribution of Indian Owned Land



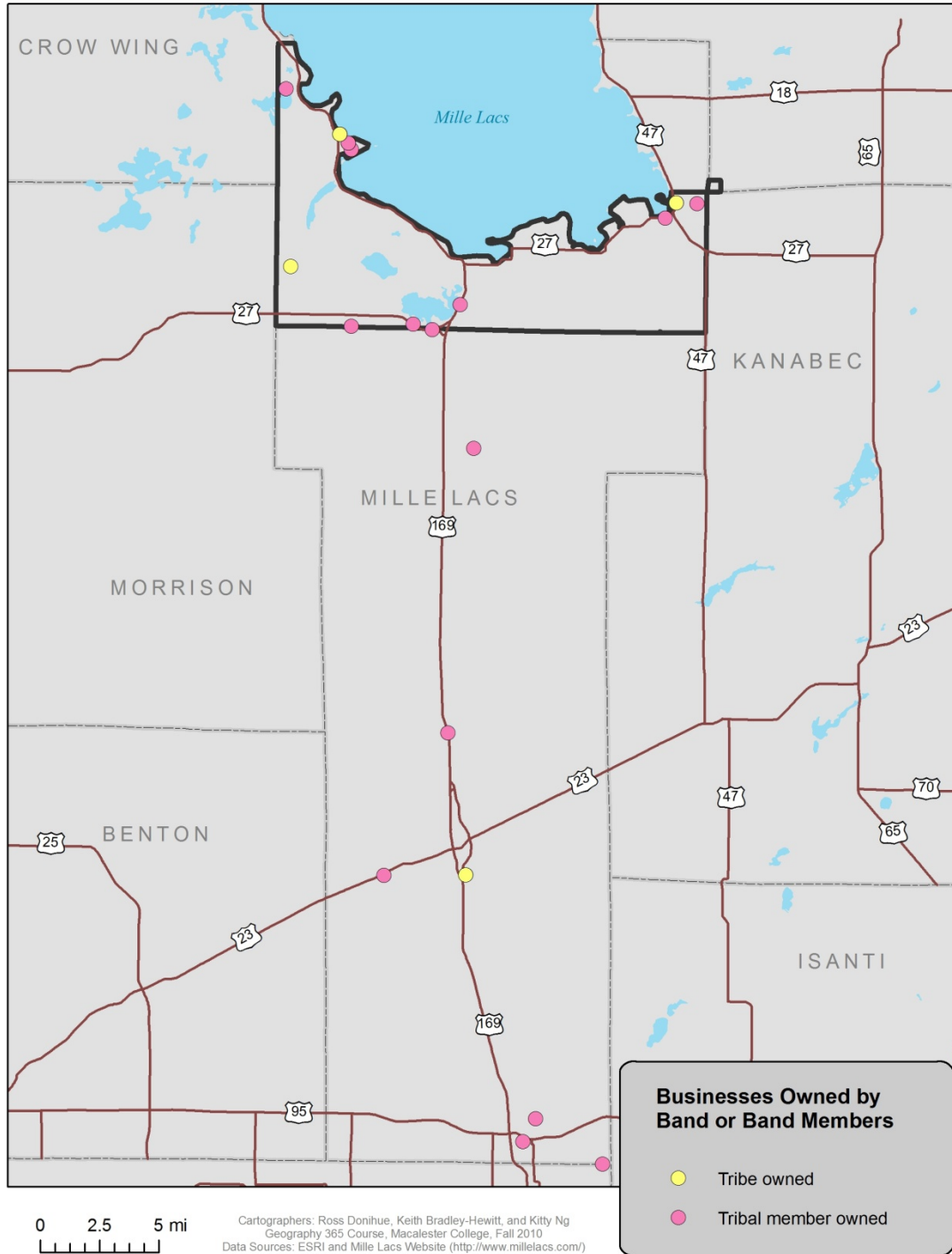
BUSINESSES WITH TRIBAL AFFILIATIONS - MILLE LACS COUNTY

Figure 4.8 is a geocoded map of all businesses listed in the Mille Lacs Band website that has tribal ownership, or is owned by a member of the tribe within Mille Lacs County. The largest trend of this map is how Indian-owned businesses are predominantly close to the highways as well as touristic sites.

Situating a business near a highway is understandable, as it is a very strategic location to catch travelers. Locating where Indian owned businesses are situated is important because when an Indian entrepreneur is considering locating a business on the reservation, it will indicate whom taxes will be generated for: the Band or the County. As such, road maintenance to the touristic features within Mille Lacs must be well- maintained, and further trust relationship issues with Mille Lacs County may arise if these ideas are not well understood.

Figure 4.8: Businesses with Tribal Affiliations - Mille Lacs County

Businesses with Mille Lacs Tribal Affiliations



SOCIAL ISSUES SERIES

In this series, we hope that you can understand the demographics of the population that lives in Mille Lacs County as well as surrounding counties. Understanding who lives in the region highlights the actors who play a role in shaping the landscape as well as also understanding who is being impacted. Through representations of race, median income, poverty, and population density within the reservation area, we hope that further understanding of the land tenure struggles may be developed.

RACE DEMOGRAPHICS

Race is a critical issue to observe on the landscape because it shows us who lives in the vicinity and who will be impacted by the changes on the land. We observed those who claimed to be just American Indians as well as those who claimed to be American Indian and another mixed race. This is primarily because some land tenure issues span across generations, and in order to get a full impression of the Indian population, we must consider all of these options in the census.

Within the Figure 4.9, much of the reservation on the western side is above the state average of Indian population to total population. This ratio turns out to be 1.6 percent for Minnesota as a whole. In comparison, it is over 10 percent of the population in the western Mille Lacs Reservation area. However, it is also important that we see the difference between racial demographics on the western and eastern sides of the reservation. In addition, there is a marked contrast between demographics in the reservation area and those of the surrounding counties; the racial demographic in the surrounding counties is significantly different than that in the reservation.

This map successfully shows how land tenure issues directly relate to the Indian community residing in the area. When there is land ownership and sovereignty by Mille Lacs, people feel safer about residing in a place they know to culturally call home, specifically Vineland. In addition, services can be directed towards the Indian population in a more effective manner, making it also a more attractive place to encourage Indians to settle down.

It is important to understand what is standing in the way of increasing Indian populations in the eastern section of the reservation. We know that the land plots under trust in the eastern section of the reservation are in much smaller sizes than those around Vineland. In addition, they are all scattered and not very well connected: both are unattractive to the potential Indian population to settle within the reservation.

As we move further away from the reservation, we can note that there is a steady decline of the Indian population in the surrounding counties. This may be due to the low community impact that the Indian population can access in areas further from the reservation, making it a less preferred location for Indians to choose to live. As a whole, the areas surrounding the Mille Lacs reservation definitely have seen a trend of less Indians living in an area as it

gets further from the reservation.

MEDIAN INCOME

Median income is a good measure of the socio-economic state of the population that resides in the region because it highlights the purchasing power they have to leverage development of social programs at the state and national level. Understanding socio-economic issues such as median income as a marker of wealth for the tribe will allow us to better understand what steps Mille Lacs Band can take in encouraging awareness of land tenure for the future.

Figure 4.10 illustrates that within the reservation, the medium income bracket lies between \$30,000 and \$47,000, which is above the state median income. However, when looking at the Mille Lacs county scale and the surrounding counties, we can see that the trend of income is consistent across the board, except Aikin, which has a lower range of socio-economic attainment. In addition, another example that breaks this trend is the population that resides around Lake Onamia, which has a median income bracket between \$15,000 and \$30,000.

In this map, it seems that the majority of the Indian population is well served, in that their median income is similar to those in the neighboring counties. However, improvements can be made in order to increase the median income in the Lake Onamia area, where some Indian populations reside. Because of the lower median income of the Indian population around Lake Onamia, there is little practical economic development to improve the roads of which tourism depends on. This divestment around Lake Onamia is thus a perpetuating cycle of economic downturn, and it is critical that there be more efforts made in order to increase economic prosperity across the board.

POVERTY

Looking at poverty as an indicator of socio-economic status within the reservation as well as the surrounding counties is important because it shows where target populations are not having their economic needs met by the greater economic system. Figure 4.11 shows that within Mille Lacs County, the general trend of poverty ranges between 8 percent and 24 percent. This is similar across the reservation. However, there are a few exceptions such as the eastern section of the reservation, around the city of Isle, where they enjoy a lower rate of poverty than the rest of the reservation.

The importance of noting the lower rate of poverty around the city of Isle is so that we may learn how to lower the poverty rate in other parts of the reservation. However, data limitations prevent us from thoroughly understanding whether the poverty rate in the area around Isle is actually masked through a large class division. This confusion is further solidified in that there isn't much Indian owned land in the area, and as such, the poverty rates may be a distortion.

However, another analysis of the situation around the city of Isle is that tourism may be a

really well situated industry for the area. There are many roads that make Isle a very desirable place to go to. It is also strategically the closest city within the reservation to the Twin Cities that also has access to water features. Increased development efforts on the western border Indian land may benefit from learning from example set by the population around Isle. Isle has benefited from the implementation of a well-situated industry, and thus, other locations on the western side of the reservation should take note.

Figure 4.9: Percent American Indian, 2000

Percent American Indian - 2000

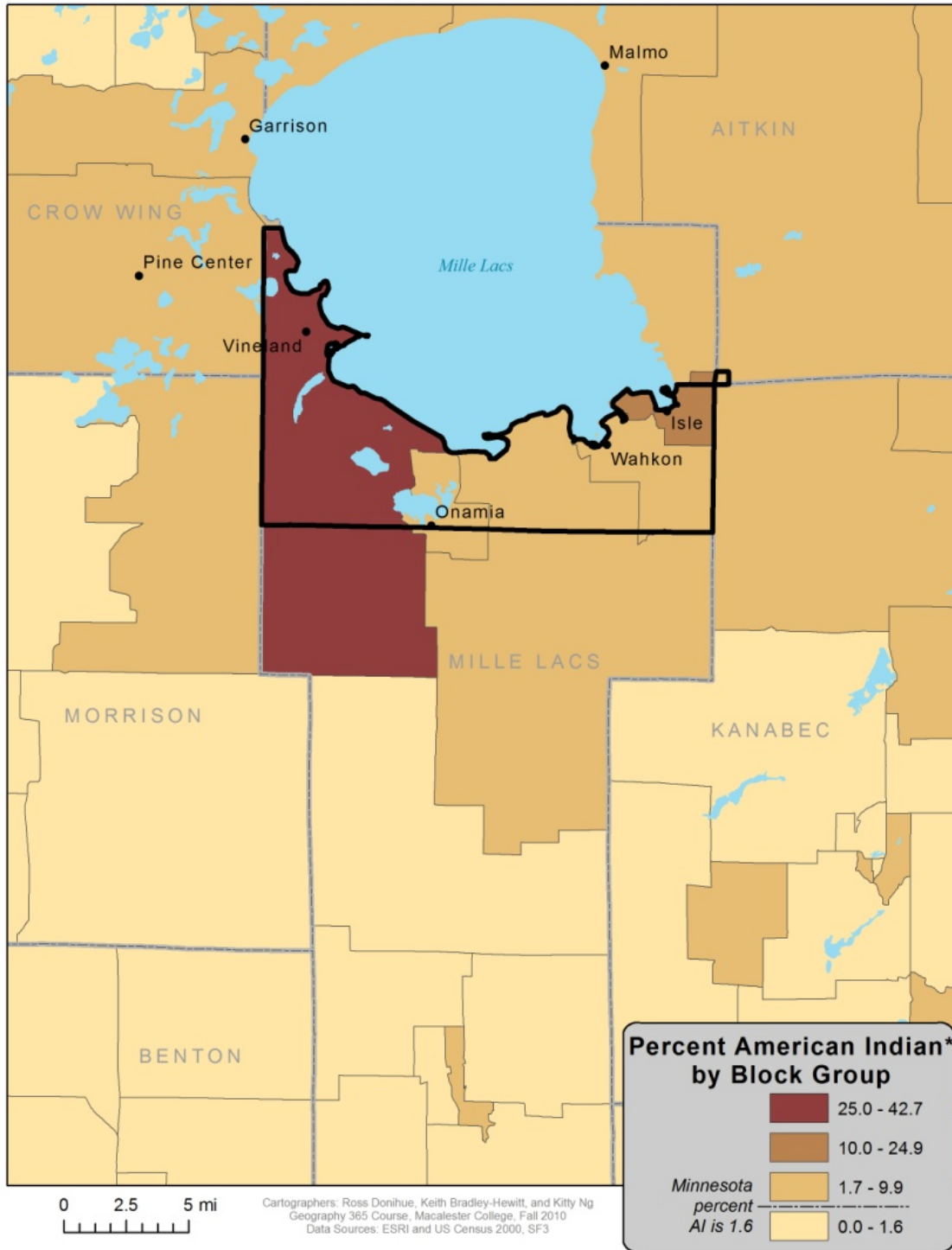


Figure 4.10: Median Income, 1999

Median Household Income - 1999

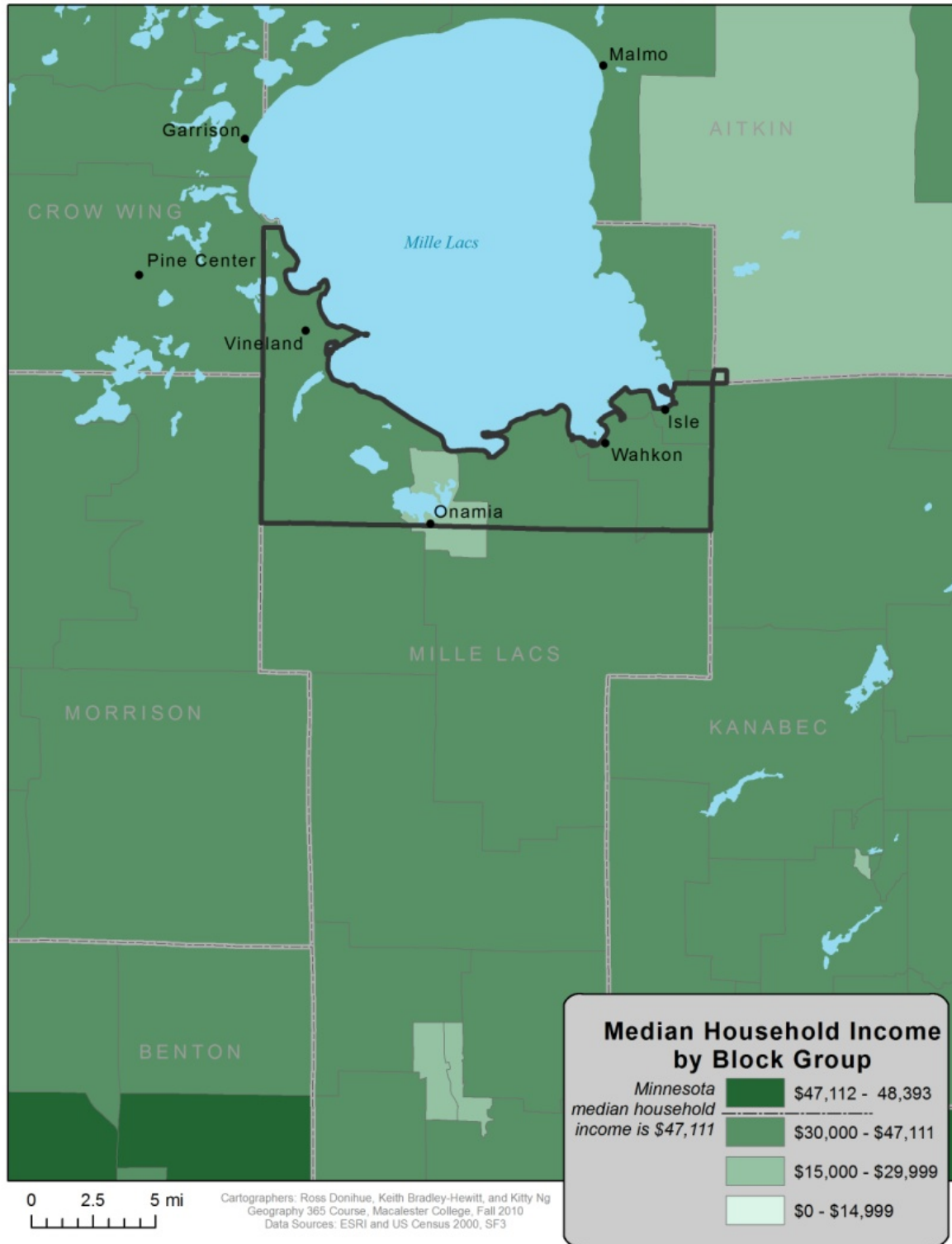
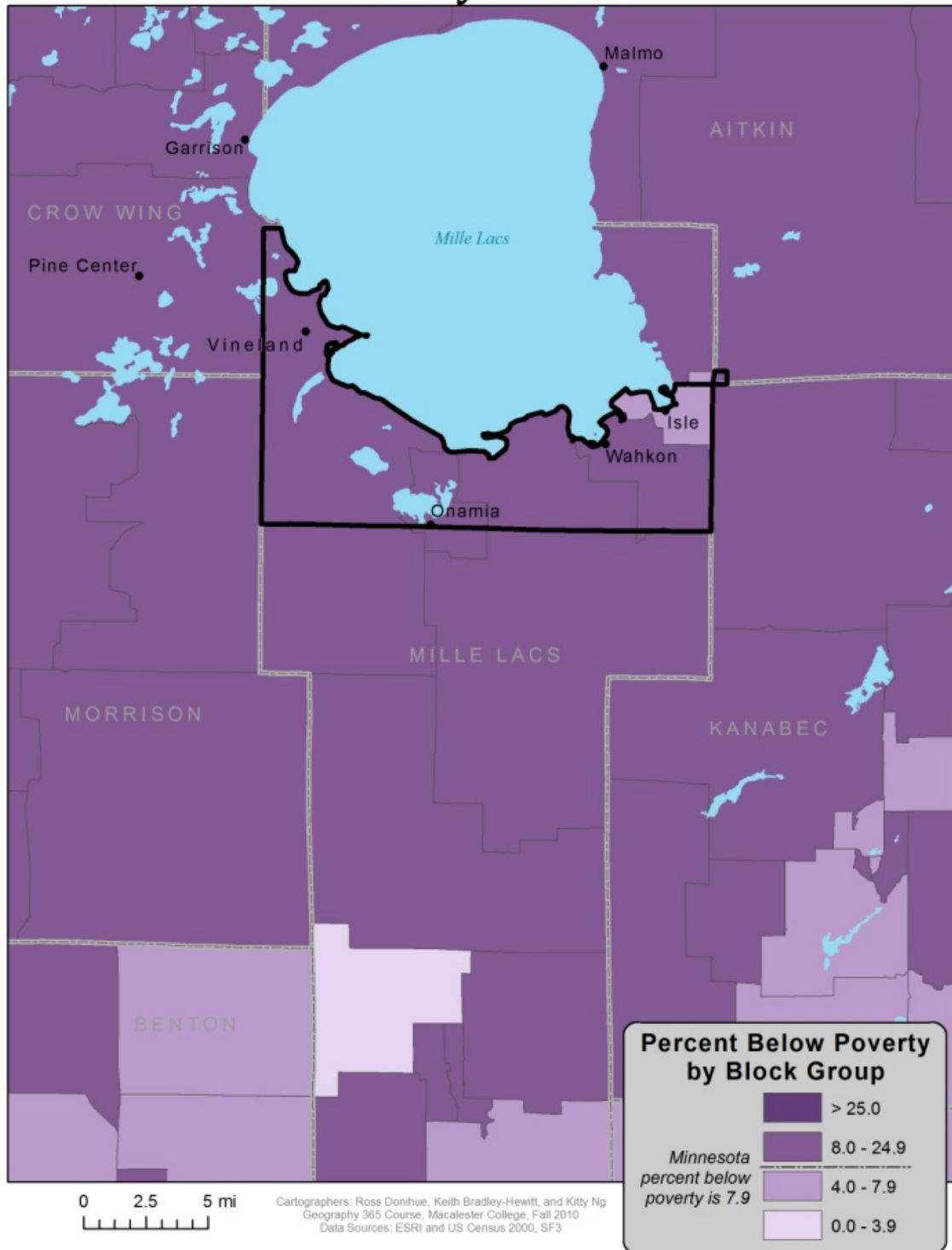


Figure 4.11: Poverty, 2000

Percent Below Poverty - 2000



POPULATION DENSITY

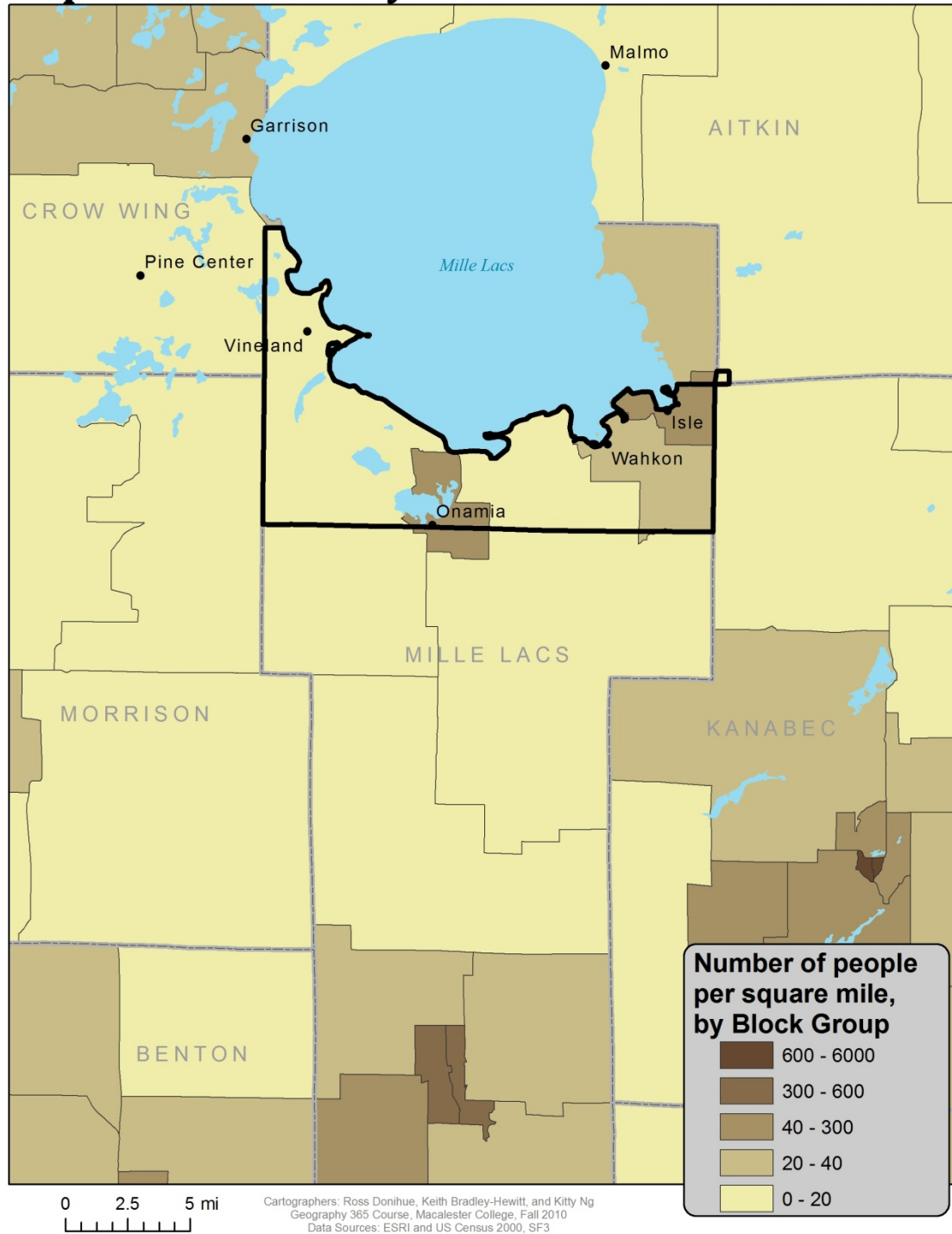
Population density is an important part of socio-economic analysis because it gives us a better understanding of how many people are living in the area. In Figure 4.12, we can see that the western side of the reservation has around 0-20 people per square mile, in comparison to the higher concentrations on the eastern side of the reservation, with 40-300 people per square mile. In addition to the east-west divide in the population density, there is also a higher population that lives around the city of Isle and Onamia. This is to be as expected, due to the nature of an urban area.

This population density map highlights where people can and cannot live e.g. the southwestern section of the reservation is mostly Kathio State park does not allow residence. In addition, the population density is higher around the cities that are not predominantly Native American, such as Vineland, because the tourism economy is not as strong as compared to Isle and Onamia: which attracts visitors from the Twin Cities. Realizing this pattern of population distribution is important when analyzing who has access to travel and who doesn't. Through this map, we can understand that infrastructure development within Mille Lacs County is very focused on the cities of Isle and Onamia because they serve as economic hubs, and in contrast, there is less desire to connect the whole County due to the lower population counts and lower economic prosperity in these areas.

Through looking at the race, median income, poverty rates, and population density, we conclude that strategically-placed development efforts could relieve some of the economic problems in the reservation area. However it should be noted that, since so much of the current economic prosperity within the Mille Lacs reservation is dependent on the preservation of natural resources, these development efforts - if pursued- should be pursued with caution. A fine balance between taking up development projects and maintaining the environments of ecological areas that attract tourism must be struck. The preservation of nature is a key factor at many sites that bring in tourism, which in turn sustains development.

Figure 4.12: Population Density, 2000

Population Density - 2000



LAND REACQUISITION

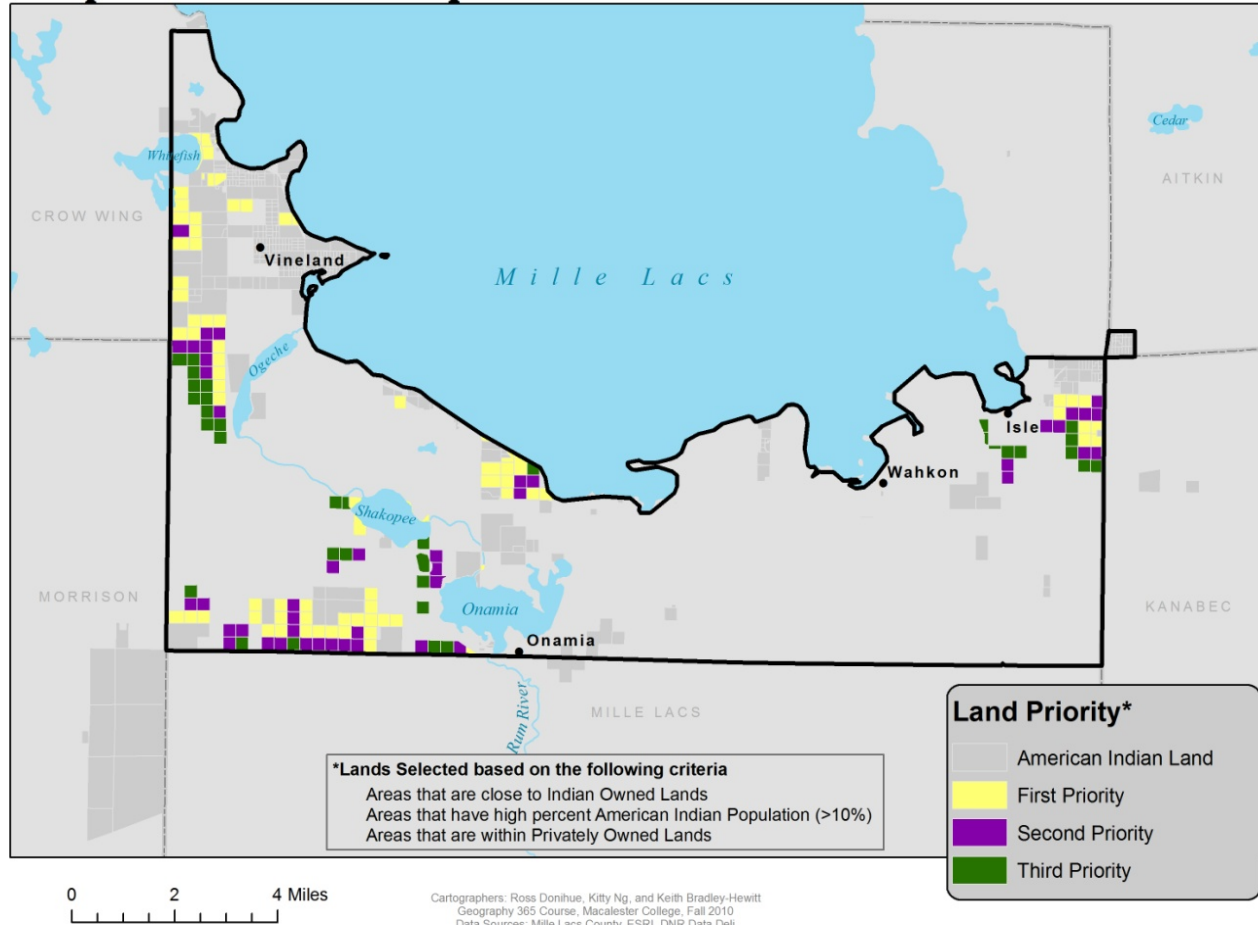
Figure 4.13 was designed to aid in land reacquisition efforts within the reservation boundaries. The map is designed around a theoretical framework designed to reduce checker boarding and use demographic information to find parcels, and areas within the reservation that the tribe can focus their efforts on. Proposed areas for reacquisition should adhere to the following three criteria: they are areas in close proximity to Indian owned lands, consist of a high percent of American Indian people (>10 percent), and they are areas of privately-owned land. From this framework we can see areas in the map in yellow, green, and purple, which are parcels that fit the criteria suggested above.

To do this analysis we used basic tools within the GIS software including clips, buffers, intersects, and merges to find areas that fit this criteria. We first selected out the block groups that had a high percentage of American Indians. From there we selected out privately-owned lands within these block groups. To consolidate this information we merged the data into one shape file, thus creating a shape file that fulfilled the first two criteria. To satisfy the criteria of areas close to American Indian-owned land we used a buffer of 200 feet, 500 feet and 1000 feet. This process was done to find lands that were within a close proximity to the reservations to reduce checker boarding and fragmentation. Finally we intersected this buffer with the previous shape file (private lands and areas with a large American Indian population); we can see the parcels that the band can focus their reacquisition efforts. The map shows first priority, second priority and third priority lands. This was created to show that areas adjacent to existing American Indian owned lands should be a priority to reduce checker boarding.

While this analysis shows specific locations to focus reacquisition efforts on, it merely creates a framework for the reservation to apply their own values and criteria for the lands that they wish to acquire. This information should be used with caution because there is the risk that private land owners will raise prices of lands that are next to American Indian owned lands. This will further complicate the reacquisition process and create an unhealthy market for lands surrounding American Indian lands.

Figure 4.13: Land Reacquisition

Proposed Land Reacquisitions



CONCLUSION

Through our maps, we sought to highlight the issues of land tenure in a political, environmental, and socio-economic lens. We can see that Mille Lacs Band faces issues such as checker boarding, weak trust relationships with the county, ineffective land management, resource access issues, sustainable diversity issues, and economic prosperity when they want to create more trust land. In order to address these issues, we sought to find ways that would best increase the quality of life for the Indian people residing in the reservation area.

In our analysis, we have come to the conclusion that the Mille Lacs Reservations greatest assets are its natural resources. These resources enable the sustainability of many recreational and consumptive activities in the region, both of which provide continued employment to the community. To lose them would be to lose a certain portion of tourism, and with that, a portion of revenue streams to the community. It is imperative that these resources are maintained in a state where they can continue to benefit the reservation. In order to achieve this task, proper regulation of parks and lakes especially is required in the reservation area. In addition, if increased development is pursued within the reservation area, it should be done in such a way that impacts on the environment are minimized. Though carefully-planned development efforts by the Mille Lacs Band may be able address some of the issues associated with poverty in the area, these efforts should be pursued with caution.

As a final note, we understand that land tenure is a very complex issue, and we sought to use these maps as a visual interpretation of its manifestation over the landscape. However, it is also important to note that there are other actors at play in determining land tenure status over property such as Mille Lacs County. At present, the lack of acknowledgement by the County over the reservation boundary is making the trust relationship a difficult challenge for continued land acquisition. We suggest that there should be greater understanding of the history of the landscape by all actors in order to move toward a better trust relationship.

LEECH LAKE INDIAN RESERVATION

INTRODUCTION

HISTORY

The Leech Lake Indian Reservation is located in northern Minnesota and encompasses a total area of 972.5 square miles of land and 337.4 square miles of water (U.S. Census Bureau). In contrast, tribally owned land within the reservation boundary is only 21,507 acres, less than five percent of the total land (Native American Indian Resources 2010). Originally, much of the reservation was inhabited by the Leech Lake Indians, an Ojibwe band, as well as by the Winnibigoshish, Pillager and Mississippi bands that lived along Cass, Winnibigoshish and Leech Lakes and in the dense forests of pine, poplar, oak, cedar, maple, birch and spruce trees (Leech Lake Band of the Ojibwe 2010).

In 1855, the Mississippi, Pillager, and Winibigoshish bands ceded all of north central Minnesota to the United States government in exchange for numerous reservations in traditional habitation areas: Leech and Cass Lake, Winnibigoshish, Mille Lacs, Sandy Lake, Rice Lake, Gull Lake, Rabbit Lake, and Lake Pokegama. Only eight years later, in 1863, these three bands signed another treaty ceding all of the reservations established in the original treaty, and sending all but the Sandy Lake and Mille Lacs Bands to a new, contiguous, concentrated Leech Lake Reservation (Native American Indian Resources 2010; Treuer 2010).

Though the treaties resulted in massive loss of Indian land, they did temporarily succeed in protecting a large portion of the valuable white and red pine forests from being privatized for alternate uses. However, the passage of the Nelson Act in 1889 (Minnesota's version of the federal Dawes Act of 1887) gave 80 acres of non-pine land to each tribal family, and left non-allotted Indian lands up for sale to individual settlers, railroad companies, and timber companies. Loggers moved into the area, causing logging camps to spring up throughout the reservation. Within the next decade both Walker (in 1896) and Cass Lake (in 1898) were established (Leech Lake Band of the Ojibwe 2010).

The land held in trust for individual Indians remained elusive for the logging industry, and state legislators lobbied to allow loggers access to timber on tribal allotments, culminating in the Steenerson and Clapp Acts of 1904. These laws allowed the Department of the Interior to issue additional 80 acre plots of land to owners, and allowed individual Indian landowners to sell their valuable timber resources to logging companies. Prior to these acts, timber lands could not be allotted and communal lands could not be sold. In combination, these acts legalized both the allotment and the sale of communal timber holdings for the benefit of private logging companies (National Indian Gaming Association 2010).

In response to these various federal laws, the Federation of Women's Clubs began to lobby for a national forest to be established in north-central Minnesota. One member of the club, Maria Sanford, believed the Nelson Act would allow "millionaire lumbermen" to 'saw down, chop off, and drive out every pine tree the region contains' (Minnesota Department of Natural Resources 2010). The club was successful in their efforts, and in 1908, the "Minnesota National Forest" was established. In 1928, the name was changed to the "Chippewa National Forest." Today, the forest encompasses 1.6 million acres, much of which is within the Leech Lake Reservation (United States Department of Agriculture 2010). The forest covers 85 percent of the reservation (Treuer 2010). Unfortunately, the establishment of the forest did little to stop the widespread destruction of the red and white pine; over 95 percent of the pine that existed before the establishment of the Chippewa National Forest has been cut. Further, the existence of the forest illustrates that the federal government "has been reluctant to allow the tribe to share management of the natural resources on the reservation or any of the financial advantages," evidenced by extensive logging and timber sales that benefit the U.S. government and private corporations (Treuer 2010, p. 35).

By the time allotment was completed in 1934, due to the land allocation acts and forest establishment that preceded it, "Leech Lake Indians owned less than four percent of their own reservation" in 1934 (Treuer 2010, p. 37).

THE LEECH LAKE BAND OF THE OJIBWE: CURRENT DEMOGRAPHICS AND ACTIVITIES

Today, there are 8,959 Leech Lake Band members, though not all members live on the reservation.

The Band offers numerous public services to its members, including its own K-12 magnet school, Bug-O-Nay-Ge-Shig, which is located on the reservation and serves over 200 students living both on and off the reservation. Other youth-related services on the reservation include child care services, Early Head Start, Head Start, a tribal college, and multiple youth programs. The tribe also offers healthcare services such as a nutrition program for elders, an addiction and dependency program, and a diabetes fitness program, among others. Despite the various programs offered on the reservation, the tribe still struggles with issues of poverty, unemployment, and low levels of educational attainment (Leech Lake Band of the Ojibwe 2010). Furthermore, in 2002 Cass County—the county that makes up about half of the reservation—had more children in foster care and other state-supervised living situations than any other county in the state (Oakes 2004).

A significant majority of land within the reservation boundary is covered by lakes, wetlands and forests. As such, hunting and fishing are common practices on reservation land for both the American Indians who live on the reservation and non-Indian residents and visitors. The numerous lakes and forests offer opportunities for outdoor activities, recreation, and sports, making Leech Lake a popular tourist destination. In addition, the reservation is home to numerous resorts, golf courses, and country clubs, including the Leech Lake Yacht Club. The Leech Lake Tourism Bureau advertises boating, sailing, fishing, golf, hunting, hiking, and snowmobiling among other popular activities in the area. Most of these industries are owned by private companies; however, the Leech Lake Band does own the Northern Lights Casino, The Palace Casino, and White Oak Casino (Leech Lake Band of the Ojibwe 2010).

MAPS

The series of maps that follow are intended to show physical, demographic and social trends on and around the Leech Lake Reservation. Each map will be accompanied by a brief explanation and partial analysis of the particular trend that it shows.

REFERENCE MAP

The first map in the series, Figure 5.1, shows the basic features, highways, cities, and surrounding geography of the Leech Lake Reservation. The locator map situates the reservation in north central Minnesota, within Cass, Itasca, Beltrami, and Hubbard counties. The Leech Lake Reservation is characterized by abundant lakes (over one-third of its 838,000 acres are covered by water), the three largest of which are Lake Winnibigoshish, Leech Lake, and Cass Lake. Perhaps most importantly, the reference map shows the boundaries of the Chippewa National Forest, illustrated using green hash-marks, whose southwestern portion covers nearly *all* (85 percent) of the reservation land.

LAND COVER AND USE

Though the available data for the Leech Lake Reservation is limited, the land cover and land use map, Figure 5.2, reveals that the majority of the reservation land is covered by forests, lakes, and wetlands. Very few areas are designated as urban, with the exception of the towns of Cass Lake and Bena. Grasslands also make up a noticeable portion of the reservation, and are concentrated primarily on the periphery. Other apparent land use features are logging sites, which are scattered throughout the forest, and some very small areas of cultivated land. The land cover/ land use map further illustrates that humans have altered the landscape throughout the reservation: the urban areas are dispersed throughout the landscape and logging and mining sites are situated in nearly all forested areas.

LAND TENURE

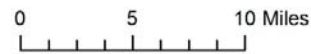
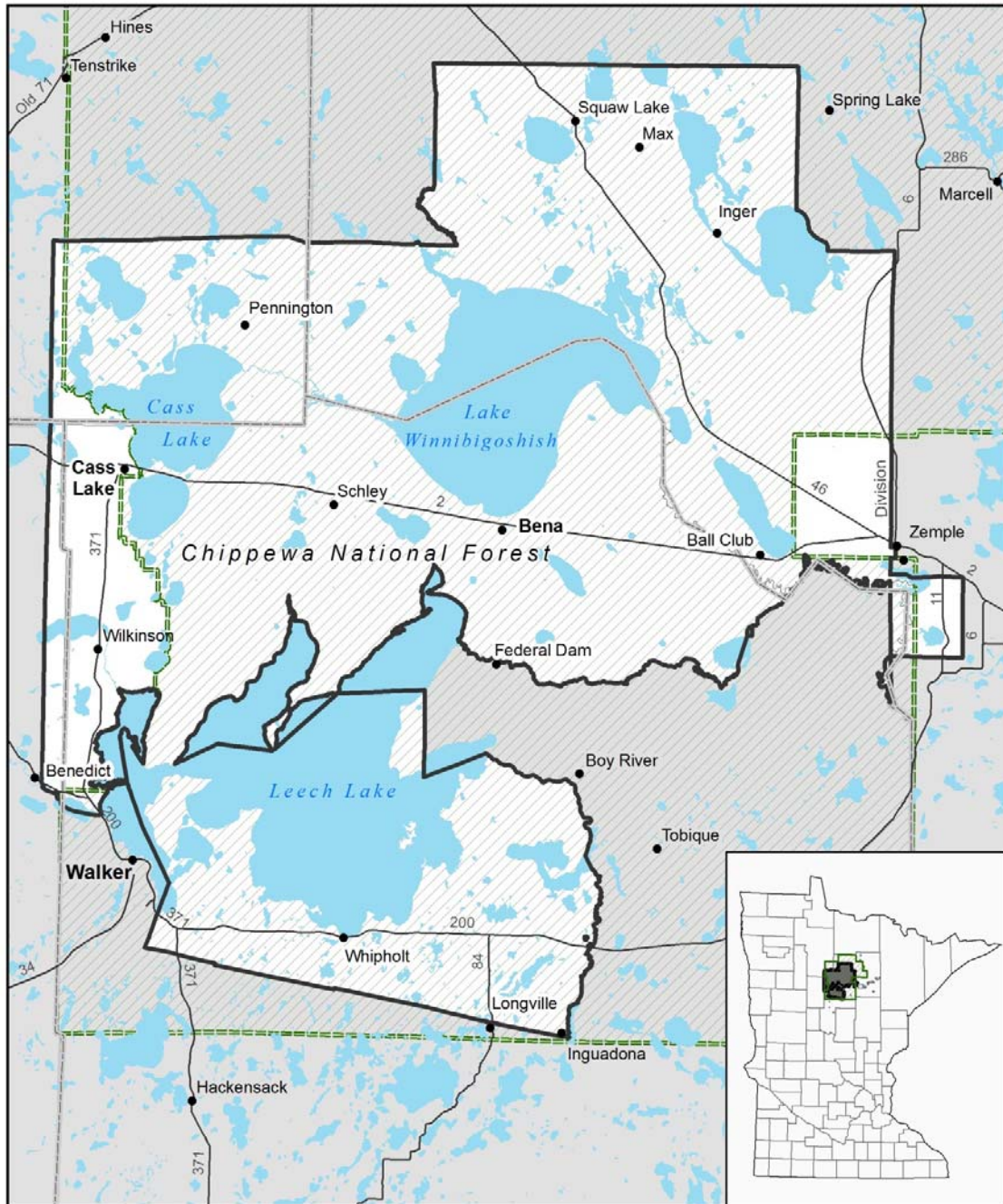
The map of land tenure on Leech Lake Reservation, Figure 5.3, shows ownership of each parcel of land lying within the reservation boundary. Because each of the colors in the map legend indicates a different type of owner, the myriad colors on the map clearly illustrate that numerous *non-Indian* landowners have claimed land on the reservation—a phenomenon, due to the pattern that emerges, known as checkerboarding. The yellow shade, indicating federal ownership, is quite prevalent due to the Chippewa National Forest that covers most of the reservation; many of the remaining parcels belong to private owners (mostly individual landowners) or corporate owners (mainly logging companies and small recreational businesses).

INDIAN VERSUS NON-INDIAN OWNED LAND

In order to more clearly illustrate the limited number of parcels on the Leech Lake Indian Reservation that the tribe actually controls, Figure 5.4 shows the land that the tribe holds in trust. Trust land parcels, shown in red, amount to just 5 percent of the land on the reservation being held in trust status (see Figure 5.3, which delineates the various types of owners).

Figure 5.1: Leech Lake Reservation Reference Map

Leech Lake Reservation



Cartographers: Caneff, Goforth, and Kistin
 Geography 365 Course, Macalester College, Fall 2010
 Data Sources: ESRI, DNR

Figure 5.2: Land Cover and Land Use

Land Cover Land Use

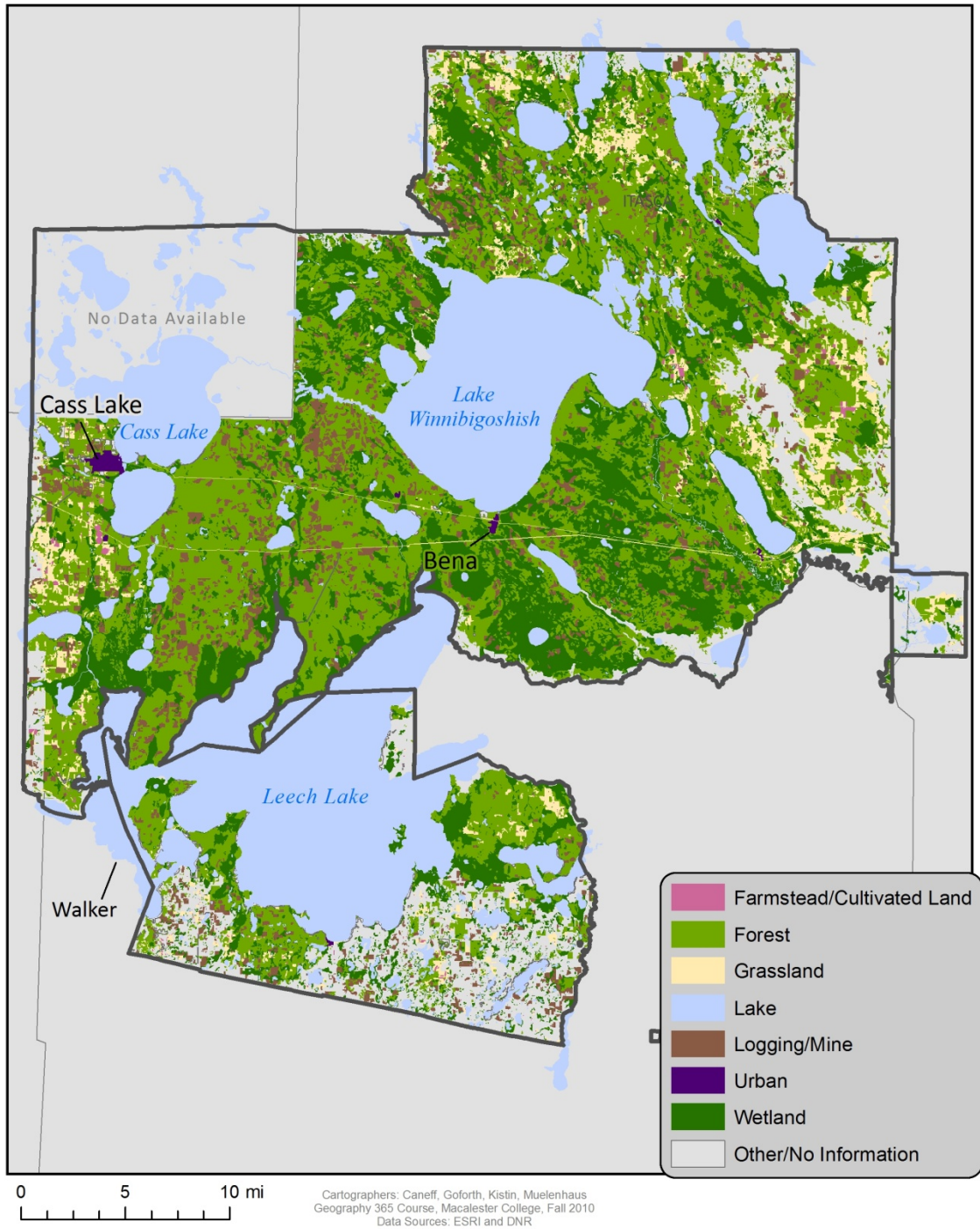


Figure 5.3: Land Tenure

Land Tenure - Leech Lake Reservation

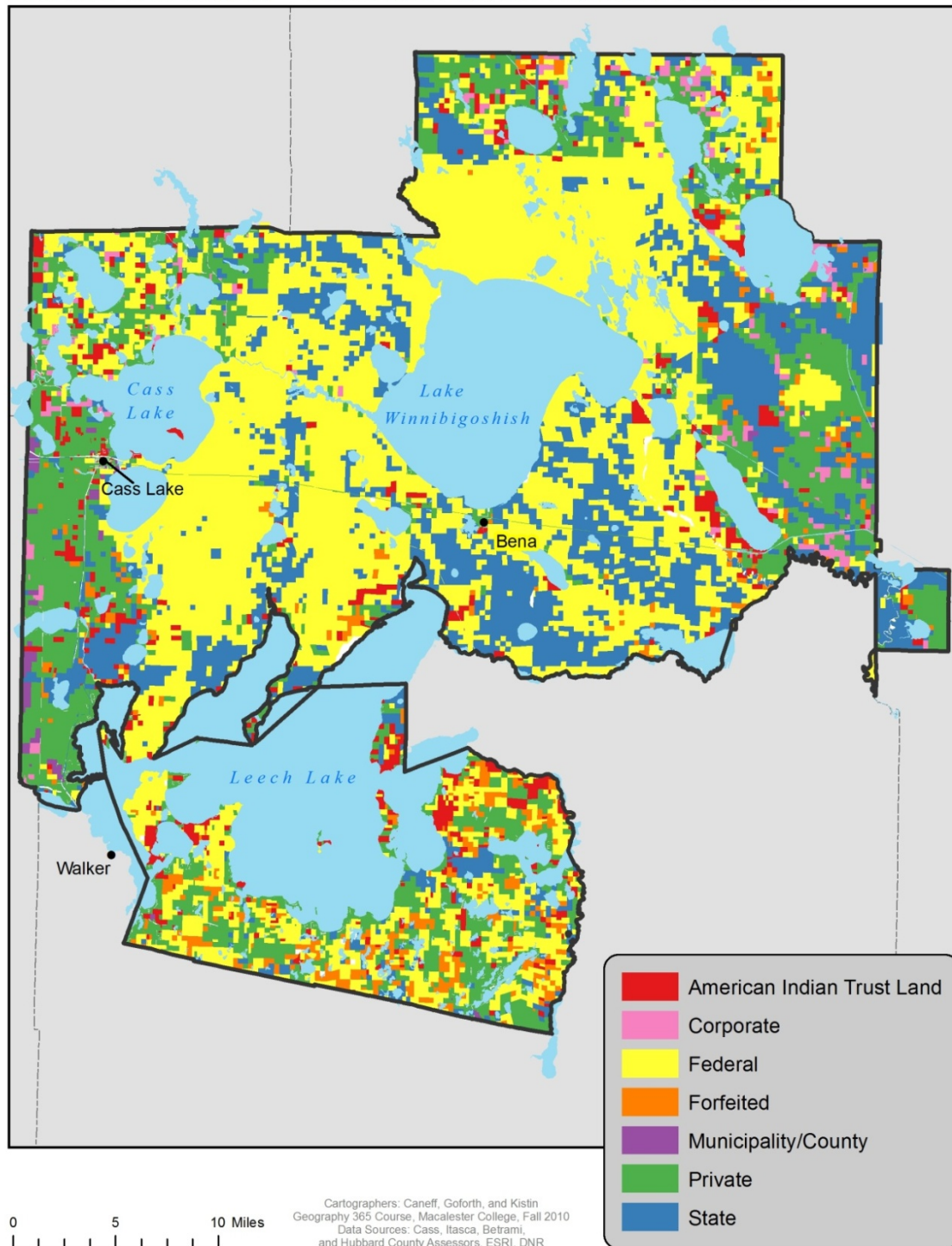
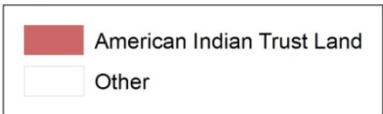
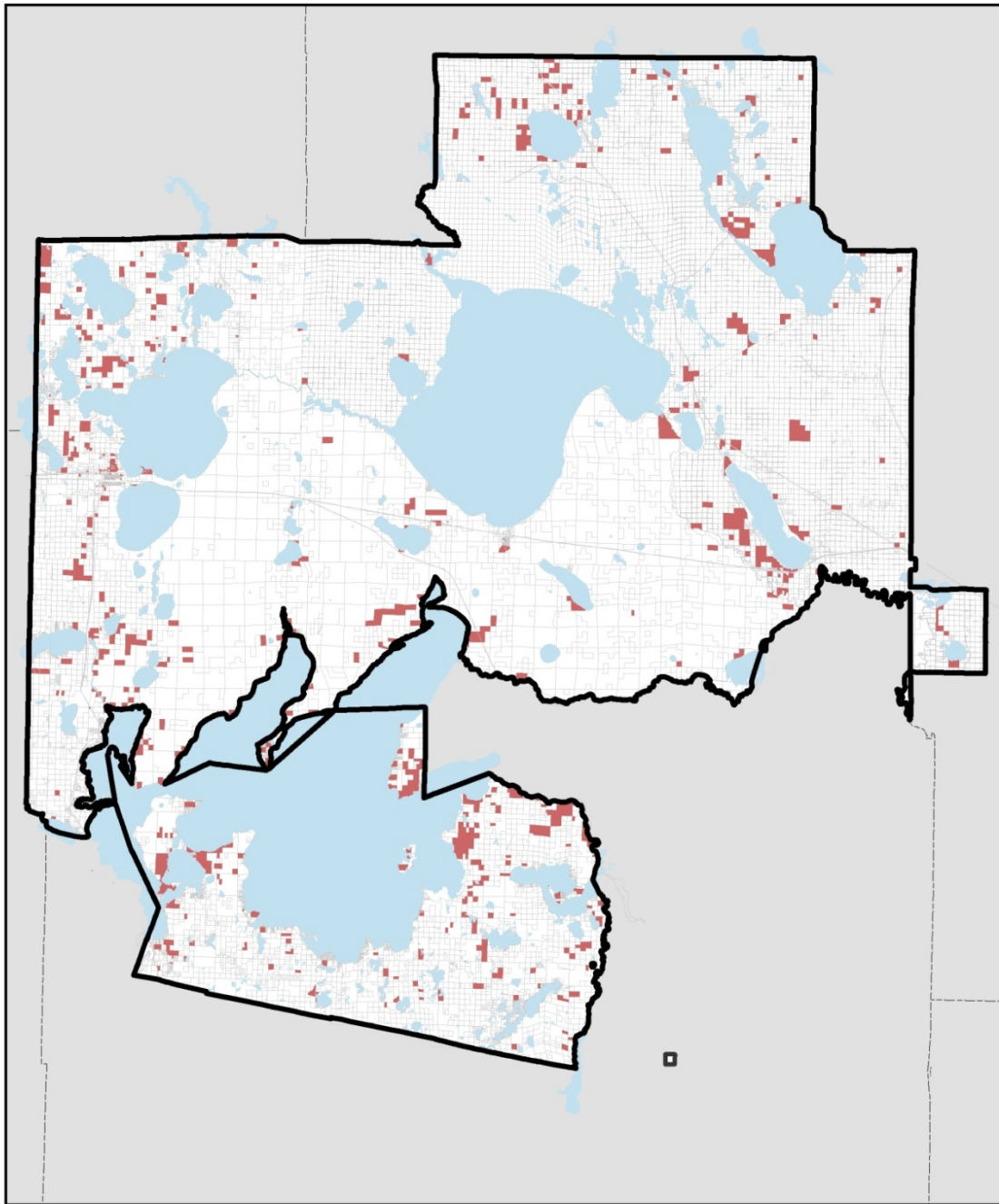


Figure 5.4: Indian Trust Land

Indian Trust Land - Leech Lake Reservation



Cartographers: Caneff, Goforth, and Kistin
Geography 365 Course, Macalester College, Fall 2010
Data Sources: Cass, Itasca, Beltrami,
and Hubbard County Assessors, ESRI, DNR

UNEMPLOYMENT

To show unemployment trends both on and off the reservation, Figure 5.5 shows the percent of the total labor force that is unemployed by block group. As the map illustrates, the majority of the block groups within the reservation have unemployment rates above the current Minnesota state average of 7.1 percent. The areas surrounding Cass Lake and Squaw Lake have the highest levels of unemployment, with rates well above the state average. Though much of the unemployment seems to be concentrated within the reservation, there are concentrations of unemployment off the reservation as well, especially to the south and to the east of the reservation boundary. Most of the area, this map makes clear, experiences relatively high levels of unemployment.

POPULATION DENSITY

Figure 5.6 depicts population density on and around the Leech Lake Reservation, ultimately showing universally low population densities of between 0 and 20 people per square mile in the block groups on and off the reservation. On the reservation there is a small, higher density concentration of people living around the town of Cass Lake. Off the reservation, population is concentrated around the city of Bemidji, Walker and Grand Rapids. Overall, population densities are quite low in the region with the exception of larger urban areas; because the reservation includes only one such area, there is only one block group of higher population density within the reservation boundary.

RACE

Figure 5.7 depicts the percentage of the population by block group that identifies as American Indian or "American Indian in combination with another race." These data are depicted for block groups both on and off the reservation. The state average for this census category is 1.6 percent. As the map illustrates, many people living within the reservation identify as American Indian; all of the block groups that are completely encompassed by the reservation boundary have populations of between 25 percent and 75 percent American Indian. Of the three block groups that are partially within the boundary, the population is between 1.7 percent and 25 percent American Indian, still above the state average. None of the block groups surrounding the reservation have such a large percentage of their population identifying as American Indian; all are below 25 percent, indicating a high concentration of American Indians living within the Leech Lake Reservation boundary compared with surrounding areas.

INCOME

Figure 5.8 shows median household income in 1999 by block group. As the map illustrates, every block group within the Leech Lake Reservation falls below the Minnesota median income of \$47,111. Much of the reservation is within the \$15,000 - \$29,000 income range. The block groups surrounding the reservation also fall below the Minnesota average; however, the majority of these areas fall within the \$30,000 - \$47,111 range, slightly higher than the range on the reservation. Although the entire region is characterized by incomes far lower than the state median, income levels on the reservation are lower still than in the surrounding block groups.

Figure 5.5: Unemployment, 2000

Unemployment - 2000

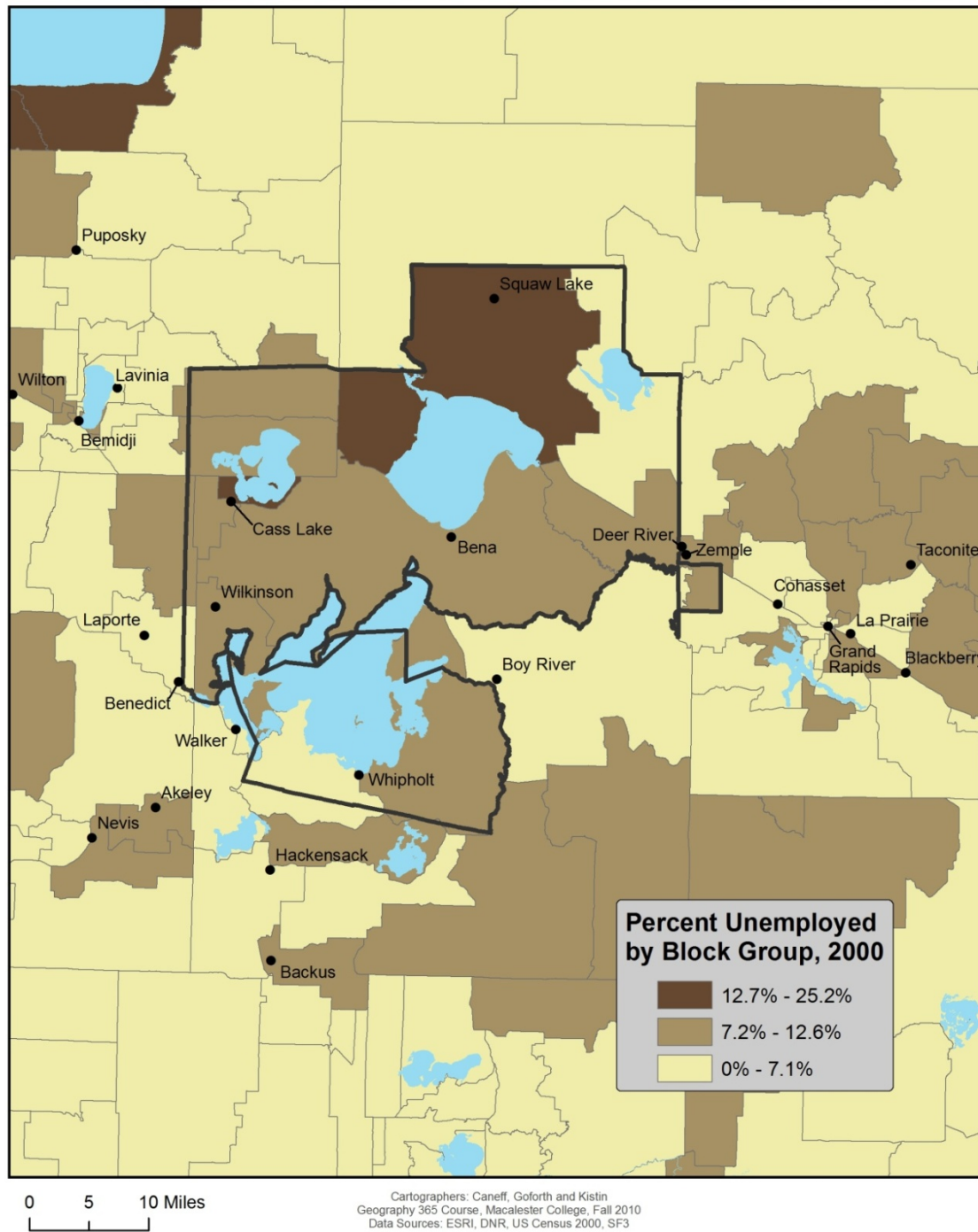


Figure 5.6: Population Density, 2000

Population Density - 2000

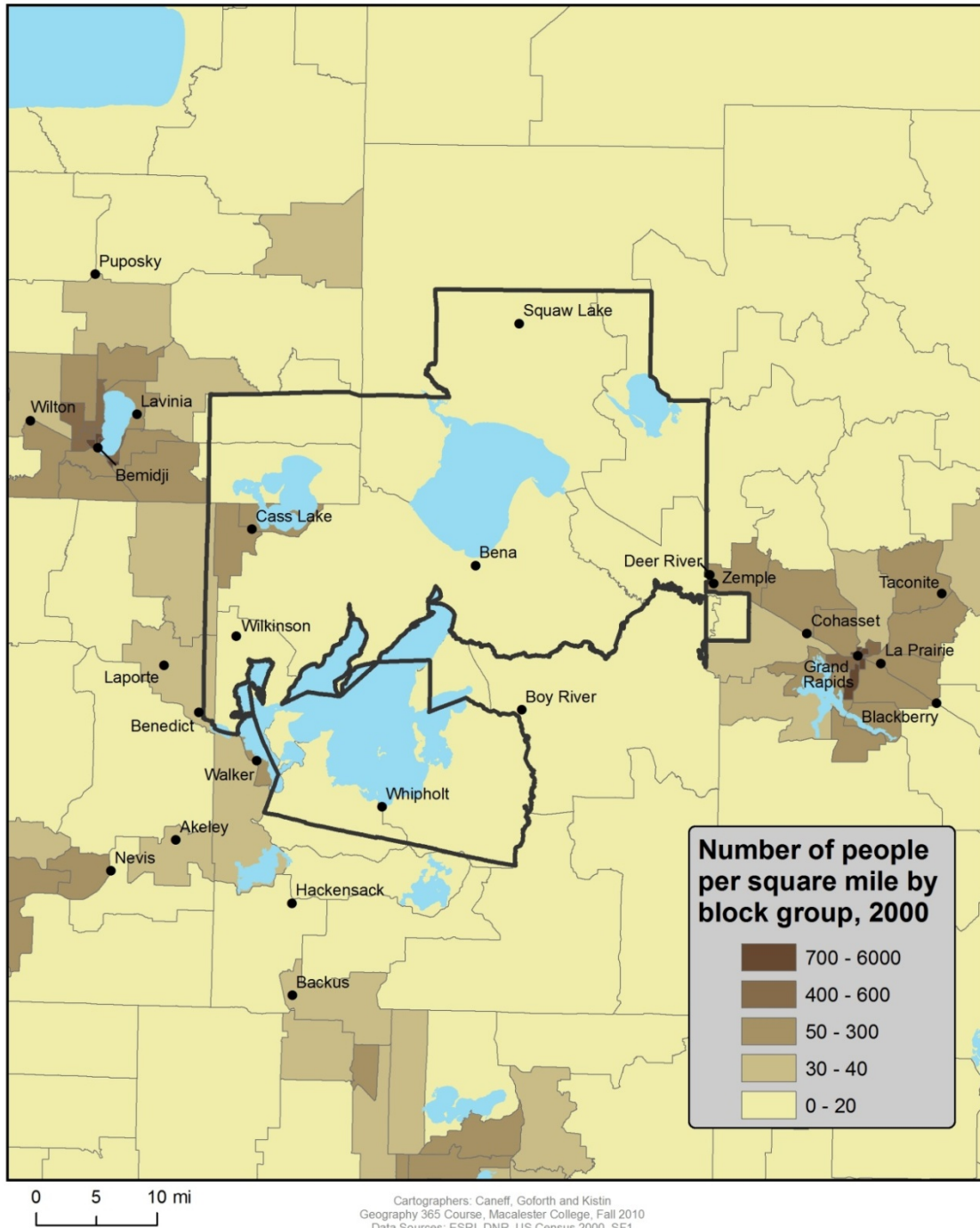


Figure 5.7: Percent American Indian, 2000

Percent American Indian - 2000

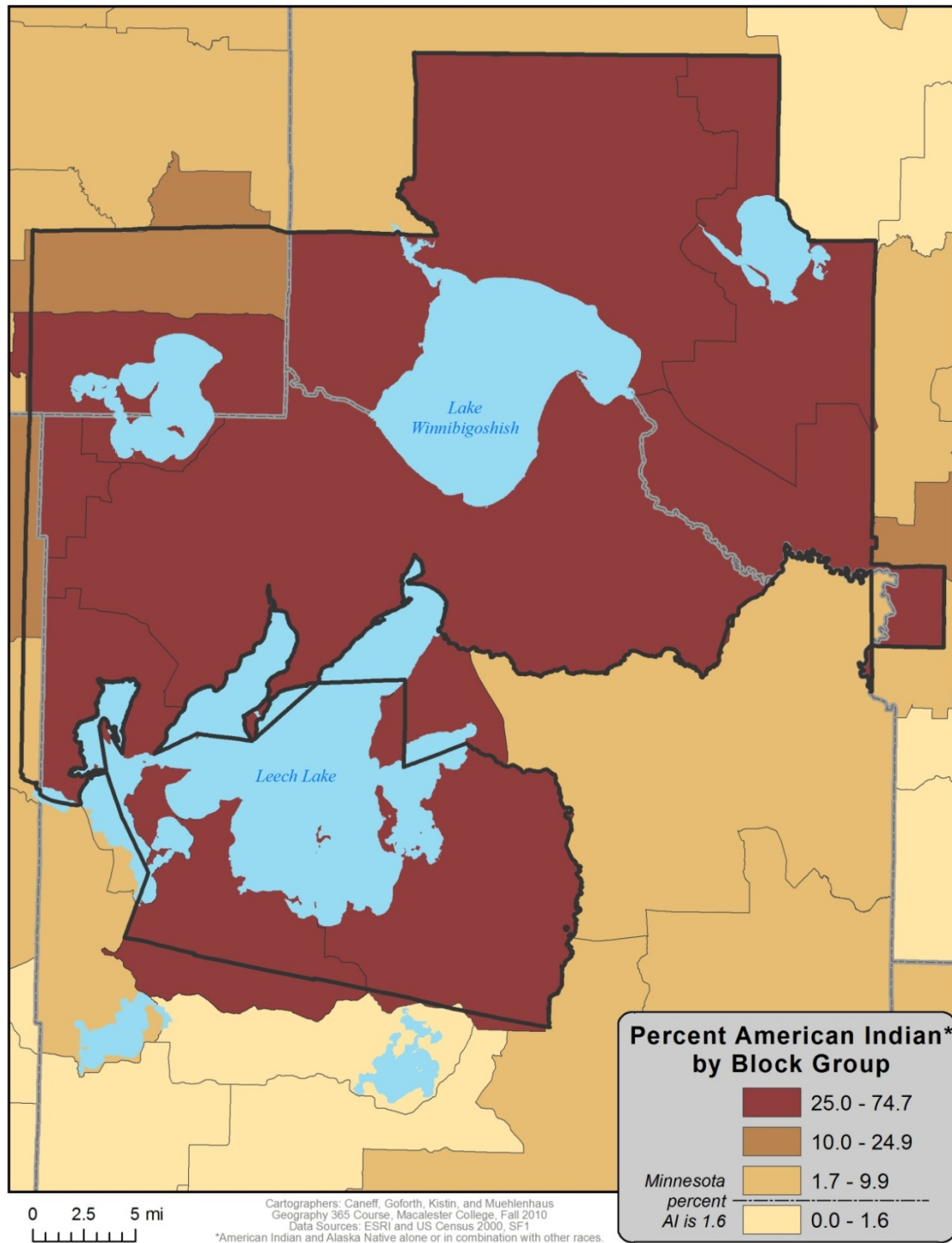
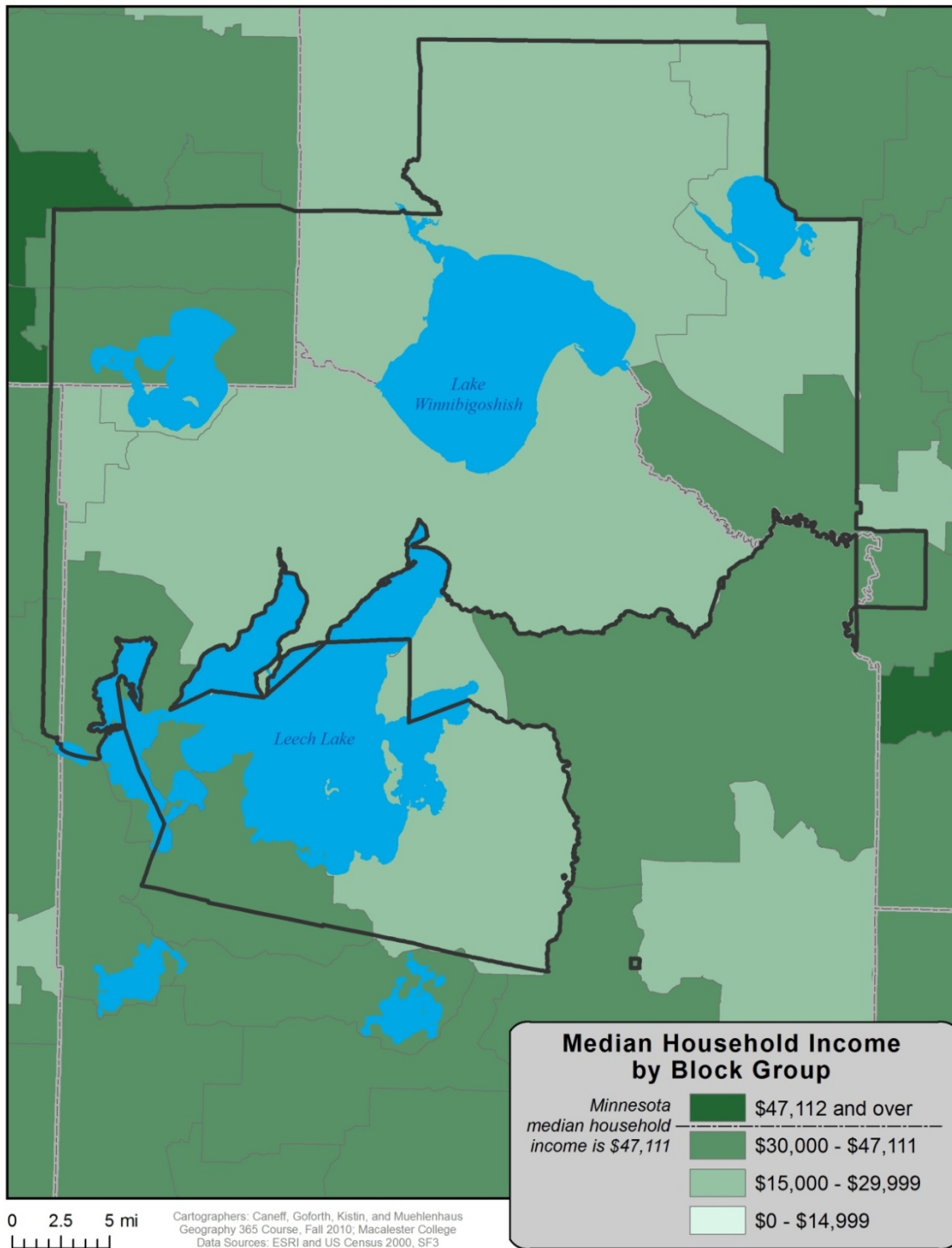


Figure 5.8: Median Household Income, 1999

Median Household Income - 1999



POVERTY:

Figure 5.9 shows poverty levels in and directly surrounding the Leech Lake Reservation. As the map illustrates, all block groups that fall within the reservation have poverty levels that are higher than the Minnesota percentage of 7.9. In fact, the majority of the reservation block groups fall within the 25-27.86 percent range, *well above* the state poverty line. Poverty off the reservation is also very high; with the majority of these block groups falling within the 8-24.9 percent range, above the statewide percentage of people living in poverty. Reflecting the same conclusions drawn from the median income map, this poverty map shows high poverty levels throughout the region, with even *higher* percentages of families living in poverty on the Leech Lake Reservation.

EDUCATIONAL ATTAINMENT

The map of educational attainment, Figure 5.10, shows the percentage of the population on and around the reservation, by census tract, that has obtained a high school diploma or equivalent (for individuals over age 25) or a Bachelor's Degree. The largest orange circle and the deepest shade of blue indicate the highest levels of educational attainment. The patterns that emerge indicate that 2 percent to 18 percent of the population within the boundaries of the Leech Lake Reservation has obtained a Bachelor's Degree. With regard to high school diplomas, Leech Lake tracts appear to show lower percentages when compared with neighboring tracts.

RECREATIONAL SITES

Figure 5.11 locates many of the major recreational sites on and near the Leech Lake Reservation. The map illustrates that the area is a prominent tourist destination, with numerous hotels, resorts, lodges, golf courses, and country clubs located within the reservation boundary. The vast majority of these sites are concentrated in a relatively small area, situated between the city of Walker (just outside the reservation boundary) and the southwest portion of the Leech Lake body of water. In addition to the privately-owned resorts and lodges, the map shows the three casinos owned by the Leech Lake Band. One of the three casinos is located on the far eastern boundary of the reservation, another towards the west, and another on the far southern boundary, surrounded by many other hotels and resorts. To the far north there are virtually no recreational sites. The map also shows the major snowmobile and hiking trails that pass through the reservation. The locations of the recreational sites indicate that the majority of the recreational sites are concentrated in the southwest, near the city of Walker.

RACE AND LAND TENURE

Figure 5.12 shows Leech Lake Band trust land in relation to high concentrations of people identifying as American Indian. Many people living in the central part of the reservation identify as American Indian. Though the tribe owns many small parcels of land in the eastern section of this area, there are additional, larger pieces of Indian-owned land to the far north and south where the concentration of American Indians is lower. It is ultimately difficult to discern a correlation between higher percentages of American Indians and larger concentrations of Indian-owned land, mostly because there are so few parcels of trust land spread throughout the reservation.

Figure 5.9: Percent Below Poverty, 2000

Percent Below Poverty – 2000

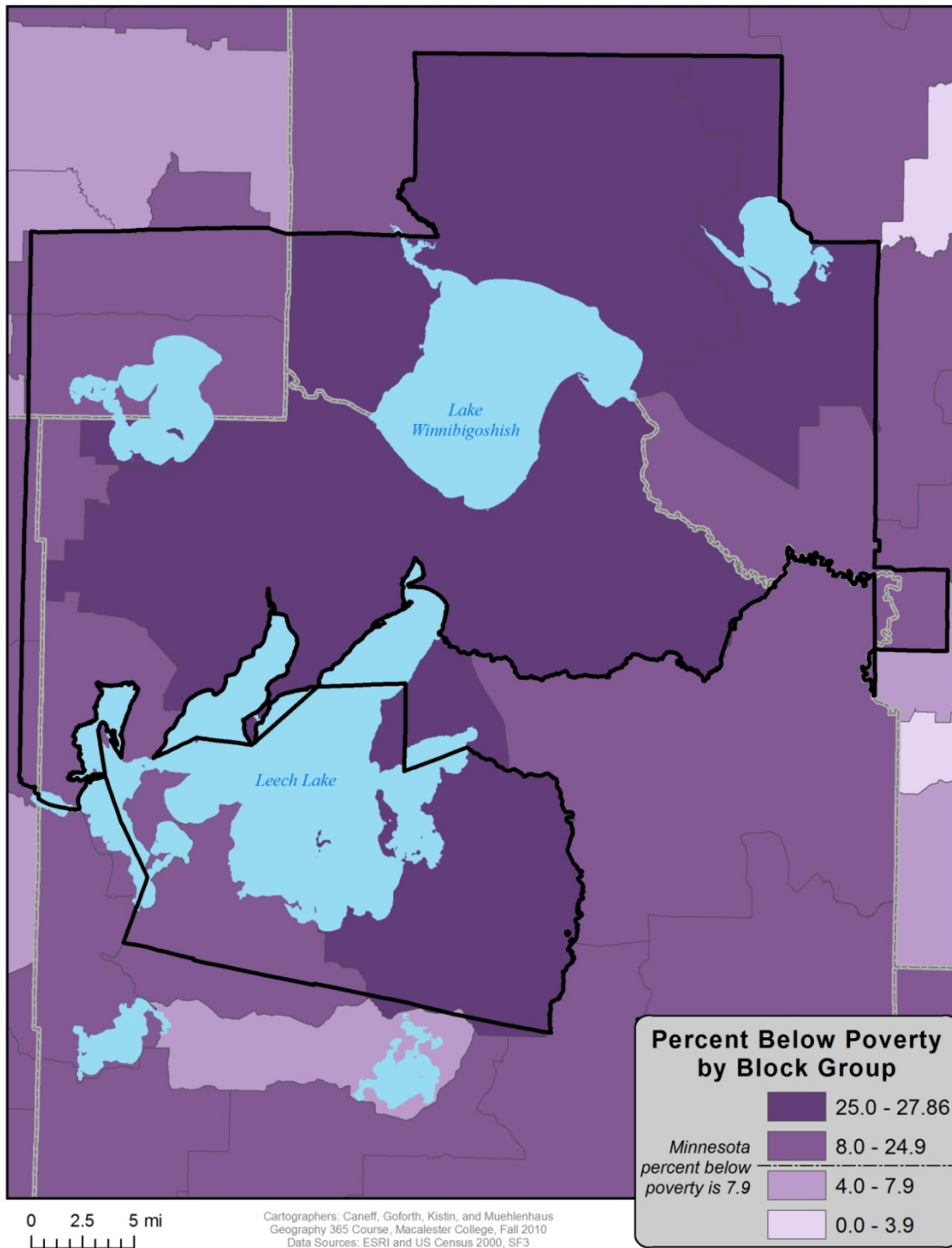


Figure 5.10: Educational Attainment, 1999

Educational Attainment - 1999

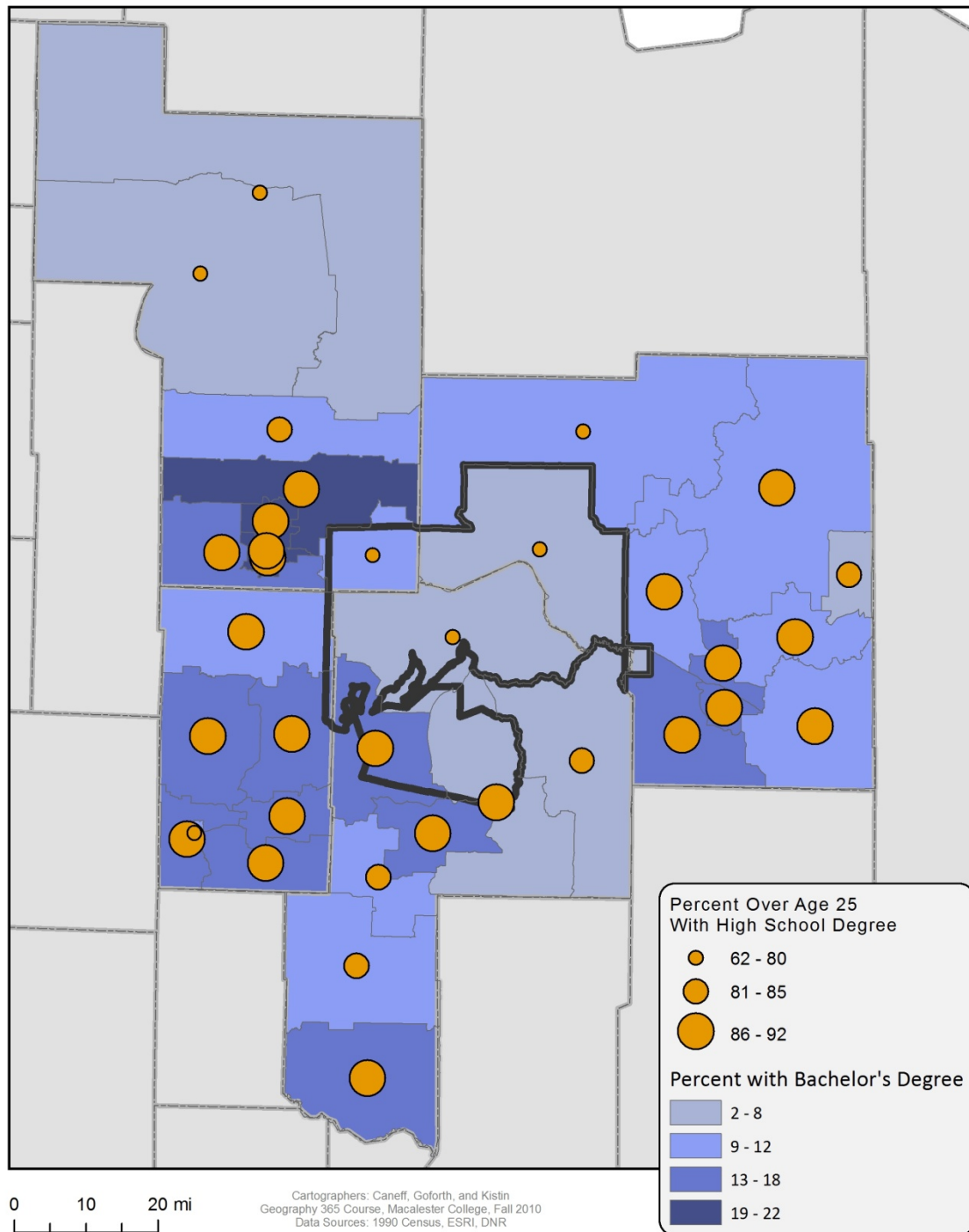


Figure 5.11: Recreational Sites

Recreational Sites

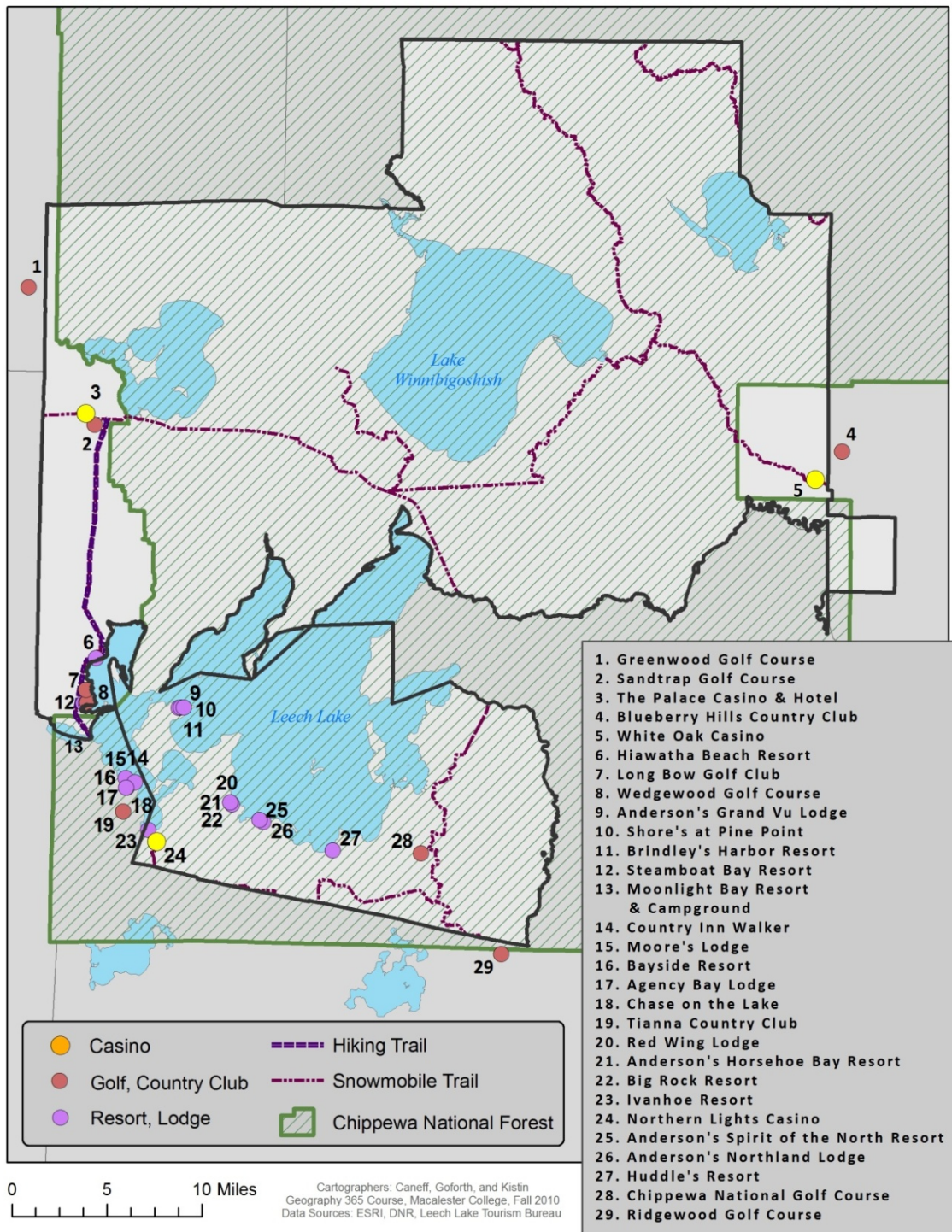
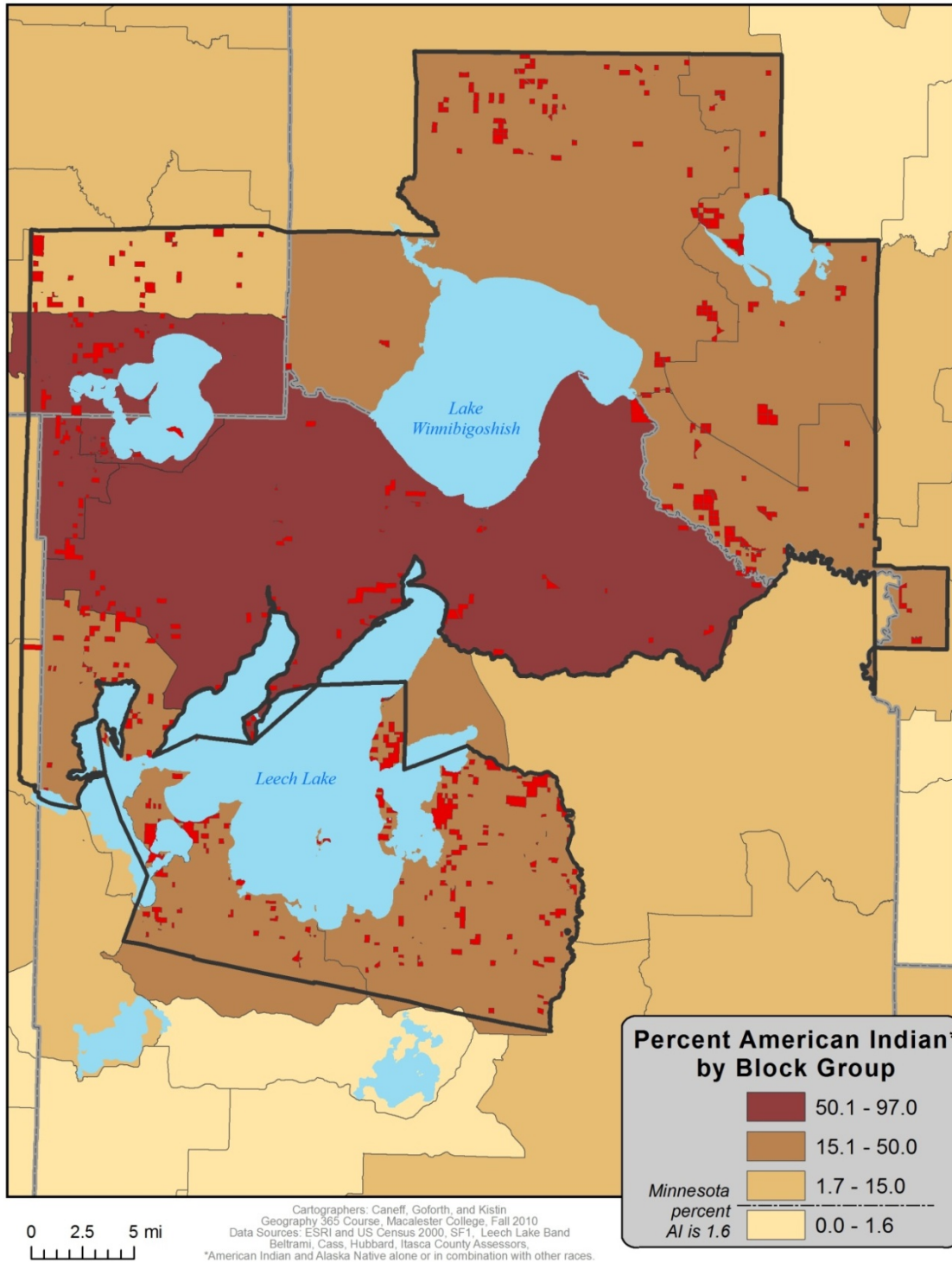


Figure 5.12: Percent American Indian and Trust Land

Percent American Indian and Trust Land



RACE AND POVERTY

Figure 5.13 is an overlay of race and poverty statistics within and around the reservation. Over 50 percent of the population in the violet block groups identifies as American Indian or American Indian in combination with another race. The pink block groups, on the other hand, have a majority non-Indian population. In both the pink *and* the purple block groups, over 25 percent of the population is living below the poverty level. The map therefore shows that the majority of the reservation population is living below the poverty level. Despite whether the population is majority Indian or majority non-Indian, poverty levels on block groups *within* the reservation boundaries are uniformly high. It can be concluded that many of the residents of Leech Lake who live in the sparsely populated areas struggle with issues of poverty, regardless of race.

The green areas, however, represent block groups in which poverty levels are lower than 10 percent. Interestingly, the map shows that there are no block groups that feature this lower level of poverty and have a population that is majority American Indian. Instead, in the only block groups on and around the reservation that have the lowest levels of poverty, *all* have a majority non-Indian population. None of the block groups that are located *entirely* within the reservation fit these criteria, and only two of these block groups actually overlap with the reservation boundary. One of these areas is the block group that encompasses Walker; another encompasses the majority of the recreation areas. It is evident, according to this map, that there is high poverty on the Leech Lake reservation, and that areas of greater affluence have predominately non-Indian majority populations.

SPATIAL ANALYST MAP AND CONCLUSIONS

Finally, we selected two characteristics of each land parcel in Cass and Itasca counties, which become criteria for land reacquisition recommendations (See Figure 5.14):

1. Proximity to land already held in trust
2. High land value

We selected parcels' proximity to existing trust lands as the first characteristic in hopes of promoting spatial continuity and congruency in the tribe's landholdings. We chose to highlight or select expensive land simply because those parcels are more valuable and potentially hold more opportunity for economic development. The deepest shade of purple on the map thus indicates the land that might potentially be the most desirable for the tribe to try and reacquire: these parcels are both valuable and close to existing trust lands. (Note: We analyzed data from Cass and Itasca counties only, because land value data are unavailable for Beltrami County and the tribe holds only four parcels in trust status in Hubbard County.)

Classification selections:

Areas falling within a one-mile radius of parcels in trust are classified or categorized as highest priority; and those falling within a two-mile radius are categorized as second priority. All other areas (i.e. the parcels that are more than two miles from existing trust lands) are not prioritized.

Next, in Cass County, we classified all parcels worth more than \$1 million to be highest priority. Parcels that are valued between \$800,000 and \$1,000,000 are classified as second priority, and the remaining, less valuable parcels are not prioritized. Because the land in Itasca County has, on average, lower estimated market values than land in Cass County, we use different classification limits for Itasca. In this county, parcels with values higher than \$500,000 are classified as highest priority; and those valued between \$300,000 and \$500,000 are classified as second priority. Parcels in Cass County whose values are lower than \$300,000 are not prioritized.

Map objective and future directions:

The objective of this map is NOT to tell the tribe where we think they should purchase land, but rather to provide a useful framework by which the Leech Lake band, based on its *own* selected criteria and values, could strategically go about reacquiring land on the reservation. They could, for example, decide that valuable land is simply too expensive to render it important to acquire, and replace this characteristic with the *lowest* land values instead. Alternatively, they may not value continuity in ownership but instead decide to try and purchase land that lies within close proximity of important tribal sites like the Tribal College or wild rice lakes. In these cases, they could adapt our process to create a map that adheres to their priorities in land reacquisition. We hope that we have provided a tool for analyzing or thinking about which land the band would like to purchase if the opportunities arise to do so.

Figure 5.13: Comparing Poverty, Affluence and Race

Poverty, Affluence, and Race - 2000

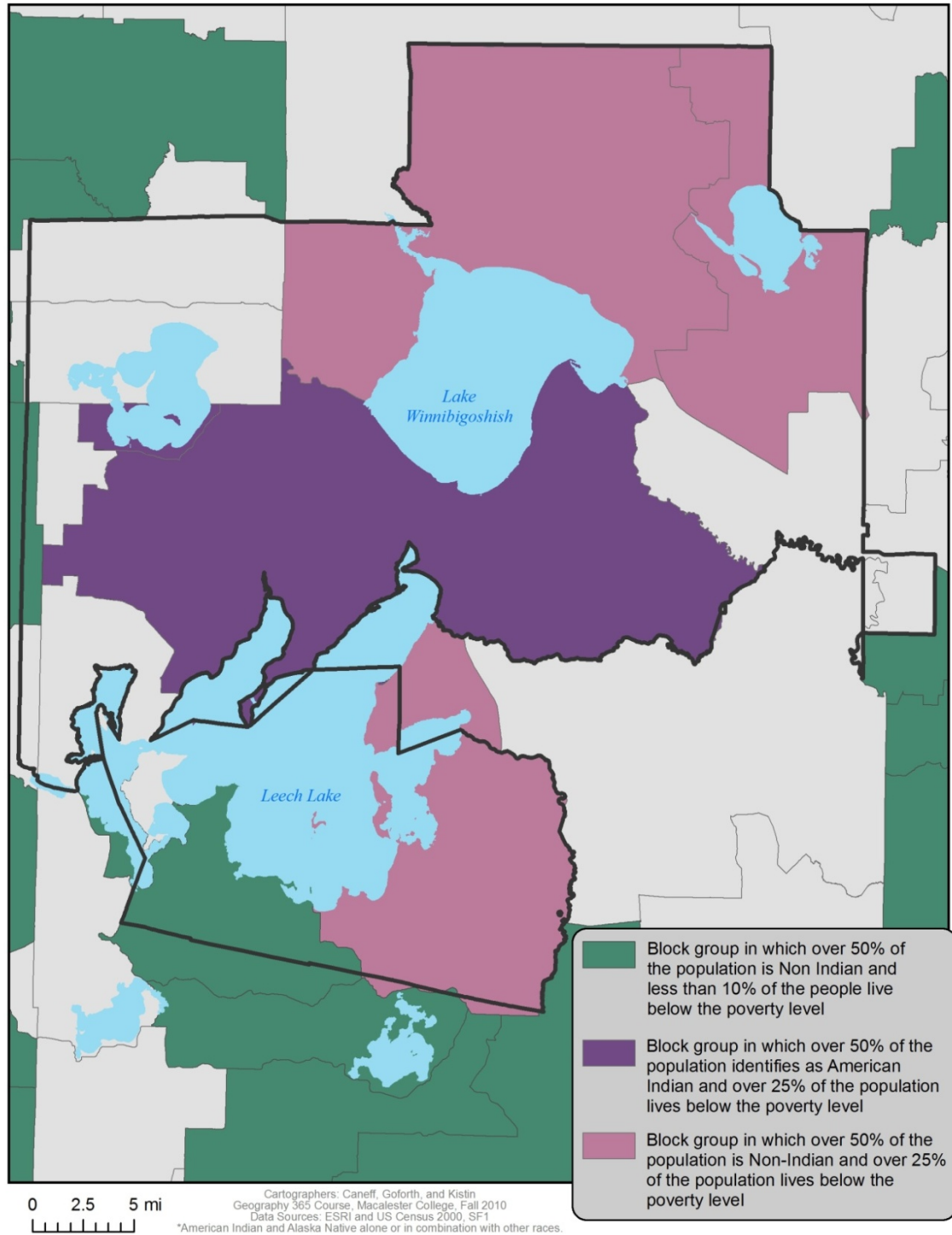
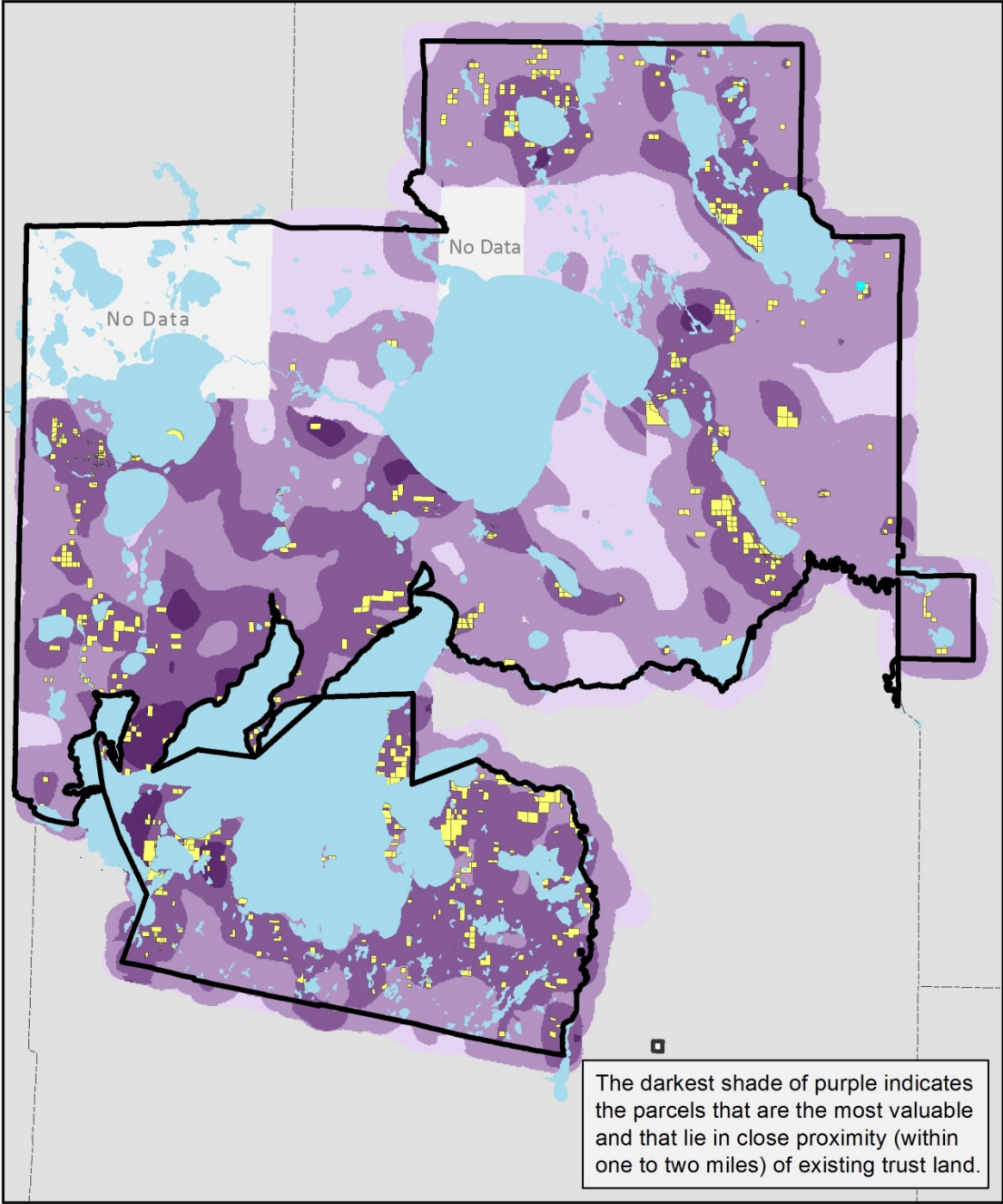


Figure 5.14: Proposed Areas for Land Reacquisition

Proposed Areas for Land Reacquisition



 American Indian Trust land

0 5 10 mi

Cartographers: Caneff, Goforth, and Kistin
Geography 365 Course, Macalester College, Fall 2010
Data Sources: Cass, Itasca, County Assessors, ESRI, DNR

ADDITIONAL FINDINGS

ESTIMATED LAND VALUE: INDIAN-OWNED LANDS

The maps of land tenure discussed previously illustrate that American Indians on the Leech Lake Reservation own a strikingly small portion of the land within their reservation boundary. Although the information displayed in these maps is visually remarkable because of the checkerboarding they illustrate, the tenure maps cannot show the *value* of the land that the tribe controls compared to the lands it doesn't. Using our tenure maps, as well as the estimated market value of individual parcels, we calculated the average value of lakefront land as well as land value within the reservation as a whole. Land values for Beltrami County are not included in these calculations, because the information was unavailable. Our initial hypothesis that lakefront land holds more economic value than other lands was correct: parcels within one-tenth of a mile from a lake are valued at an average of \$253,061, while parcels on the reservation as a whole are valued at an average of \$174,186. Next, we were curious to understand whether Indians own a proportionately smaller amount of this higher valued lakefront land relative to the amount of land they own on the reservation as a whole. Our calculations confirmed that Indians own 3 percent of lake front land in Hubbard, Cass and Itasca counties, but own 4 percent of land within Hubbard, Cass, and Itasca counties on the whole. Thus, we can conclude that American Indians own a proportionately smaller amount of the economically valuable lake front land than the less valuable non-lakefront land

Though the tribe owns a proportionately smaller amount of economically valuable lakefront land, the land that they *do* own, both near and far from lakes, is quite valuable. For instance, in Cass County, average land value is estimated at \$253,061. This number is significantly lower than the average value for trust land in Cass County, which is estimated to be worth \$768,148. Furthermore, in Itasca County, the average value of land is estimated at \$112,675, while Indian-owned land has an average estimated value of \$207,737. Trust lands in both Cass and Itasca Counties have higher estimated values, on average, than the land in the counties as a whole. Hubbard County is the exception: average land value in this county is estimated at \$104,965, while Indian-owned land is estimated at \$0. Again, data for Beltrami County were unavailable.

ANALYSIS AND DISCUSSION

The Leech Lake Indian Reservation is characterized by a huge national forest, abundant lakes, and valuable timber resources. The reservation is almost entirely rural, dotted with just a few small cities (notably Cass Lake and Bena). Walker, a city just outside the southwestern boundary of the reservation, is a center of higher population as well as economic activity centered primarily on tourism. The ownership base inside the reservation is extremely diverse, leaving very little land held in trust by the Leech Lake Band of Ojibwe and thus exemplifying the phenomenon of checkerboarding on Indian reservations.

COMPARING DEMOGRAPHIC TRENDS ON AND OFF THE RESERVATION

Demographically, the entire region of northern-central Minnesota in which the Leech Lake Reservation lies could be classified as economically depressed. While block groups within the reservation are slightly worse-off, both reservation and non-reservation populations suffer from low median incomes, high levels of poverty, low levels of educational attainment, and high rates of unemployment. In addition, the entire region is characterized by very low population densities. Though higher population densities are concentrated around some of the major cities, these populations never exceed more than 6,000 people per square mile.

In viewing the race maps and income/poverty maps in succession, at the block group level at least, very little differentiation is evident between non-Indian and American Indian populations in terms of economic disadvantage. All block groups on the reservation show high levels of poverty and low median incomes relative to state averages, regardless of the most prevalent races within those block groups. Indeed, the maps that combine race and poverty show that the areas *on the reservation* with the highest proportion of Indians have the highest levels of poverty; likewise, areas with lower proportions of Indians show the highest levels of poverty as well.

The differentiating characteristic, however, occurs when examining low levels of poverty in conjunction with the highest percentages of both Indian and non-Indian populations. While all areas within the reservation have relatively high poverty rates, areas outside of the reservation are comparatively less poor. Among these more financially-secure block groups, the majority of the residents are non-Indian. In other words, most Indians do not live in areas where wealth is concentrated around the reservation. Instead, predominantly *non-Indian* populations live in these more affluent block groups.

CONCLUSIONS AND RECOMMENDATIONS

Taking each of these maps and analyses into account, we hope to have fostered deeper understandings of the realities and characteristics of the Leech Lake Reservation. Further, the report allows for comparisons between the reservation and surrounding counties.

However, because of our lack of deeper knowledge of tribal places and community input, we are not adequately prepared to give concrete recommendations to the Leech Lake Band of Ojibwe regarding strategic land acquisitions. Instead, our spatial analysis of several characteristics serves as a helpful framework that the tribe may implement to inform its decisions about land acquisition.

6

WHITE EARTH RESERVATION

INTRODUCTION

White Earth Reservation was established in 1867 as the one intended reservations for all Ojibwe bands in Minnesota (Indian Affairs Council 2010). The Nelson Act of 1889 allotted Minnesota's reservations, including White Earth, as well as appointed the Rice Commission to see to the removal of all Ojibwe bands to White Earth as originally intended by the Federal Government. While many Ojibwe resisted this move, members of the Mississippi Band from Mille Lacs, the Pillager Band, the Pembina Band, and the Superior Band from Fond du Lac settled in White Earth. Contemporarily, White Earth Band members reside in the American Indian communities of White Earth, Pine Point/Ponsford, Naytahwaush, Rice Lake, Callaway, Elbow Lake, and Ebro. The non-native cities of Ogema, Waubun, and Mahnomen also maintain significant indigenous populations on the reservation (Ebbot and Rosenblatt 1985). White Earth Band members are employed primarily in tribal programs including construction, freeze-dried fishing bait, clothing manufacturing, IHS facilities, seasonal timber work, and employment in nearby non-native towns (Ebbot and Rosenblatt 1985).

White Earth, named after the layer of white clay beneath the surface of the reservation's western half, is located in northwestern Minnesota. Encompassing all of Mahnomen County and portions of Clearwater and Becker counties (see Figure 6.1), the reservation contains 829,440 acres of rolling hills, lakes, rivers, prairie, and conifer forest (Minnesota Indian Affairs Council 2010). Though the original reservation boundaries formed a rectangular shape, a 1979 court case declared that four townships on the northeast edge of the reservation had been ceded in 1889, and thus could not be included within the reservation boundary. A large portion of the land lost within the boundaries of White Earth Reservation can be attributed to illegal land transfers, including minor sales, tax forfeit, and full blood or administrative sales. This issue was later addressed by the 1986 White Earth Land Settlement Act (WELSA) by transferring 10,000 acres of state or county land into trust land, along with \$11 million dollars to pay for land that could not be reclaimed and a \$6 million dollar grant for economic development, which the Band used to fund the construction of the Shooting Star Casino. Because land for the casino was purchased with WELSA money, it should have immediately gone into trust, which was upheld in court in 2009 (Minnesota Public Radio 2009). The settlement only resolved approximately ten percent of all titles clouded by illegal histories, and has only received 5,600 acres of this land promised through WELSA (Minnesota Indian Affairs Council 2010). White Earth experienced additional land loss through the Steenerson Act of 1904 and the Clapp Rider, the combination of which allotted the reservation's timber resources and allowed for individual timberland sales in addition to tribally approved sales. The

combined impact of the Steenerson Act and its rider was to redefine the collective cultural resources as individual commodities, resulting in large-scale corporate purchase and concurrent rapid deforestation of White Earth's timberlands (Minnesota Indian Affairs Council 2010).

A large portion of southern White Earth is allocated to the Tamarack Wildlife Refuge which was established by the Collier Agreement of 1936 between the Biological Service (now the United States Fish and Wildlife Service) and the Bureau of Indian Affairs. This refuge was established without the consent of the Band, and contemporary activist movements target the return of this land to tribal management. While this land is regulated by a non-tribal entity, Band members maintain the right to hunt, fish, and gather wild rice in the portion of the refuge that falls within reservation boundaries through treaty obligations upheld by the cases *Minnesota v. Clark* and *White Earth Band of Chippewa v. Alexander* (Minnesota Indian Affairs Council 2010).

Throughout their history of land loss, White Earth Band members have resisted these changes and have fought to revive their land base. An example of this resistance is in the White Earth Tribal Council's efforts to restore sub marginal lands (dry, non-arable lands that have been severely degraded by agriculture, clear-cutting, and other negative environmental impacts). To date, the White Earth Band has been responsible for the restoration of 2,225 acres of this land (Bizhibayaash 2005). For the sub-marginal lands restoration project, as well as other tribal projects like the maintenance of fisheries, wild ricing, conservation, and forestry to be successful, the tribe must acquire more titles of land within the reservation boundaries to be put in trust so that the Band can take charge of all aspects of land management (White Earth Tribal Council 2010).

Considering the White Earth Band's dedication to these projects, this chapter seeks to provide additional information that might hopefully aid their efforts. We mapped the effects of land tenure history on the reservation: we determined who owns the land, what land is in trust, and what land has been reacquired through WELSA. We also sought to determine what kind of land remained in trust using land cover mapping. Seeing a strong east-west divide in both land tenure and land cover through the history of land loss and targeted reacquisition, we then looked at social indicators to see how this divide translated socially through race, median household income, poverty, population density, and education. We created maps comparing census data in 1990, 2000 and estimates of 2006 for education and median household income. Finally, we created a transportation map for the reservation public transportation system, seeing no such resource posted online. It is our hope that these maps can provide a resource for the White Earth Band to better show land tenure and its impacts on the community, as well as aiding in their activism and other land-based projects.

The data used to create our land tenure maps are based on 1993 data from Mahnommen County and 2010 data from Becker County. The Mahnommen County data was received as a paper map of the White Earth Reservation. It depicted American Indian land tenure by showing which lands were held in trust for the White Earth Band, the Minnesota Chippewa Tribe, and through WELSA. Because this map was not in digital form, the data was scanned

and underwent transformations to add digital information and make GIS files. Because the only data available for this portion addressed American Indian land tenure, no other land tenure interests can be discerned, and the rest of the extent must be determined as “unknown.” The Becker County data provides a recent and comprehensive overview of all aspects of land tenure, including non-American Indian land ownership. However, these data only pertain to the portion of the reservation that lies within Becker County, and thus provides only a partial picture of land tenure on the reservation. Because of the limitations of both data sets, they were used in combination to create the most comprehensive land tenure maps possible with the data made available.

CORE MAPS

REFERENCE MAP

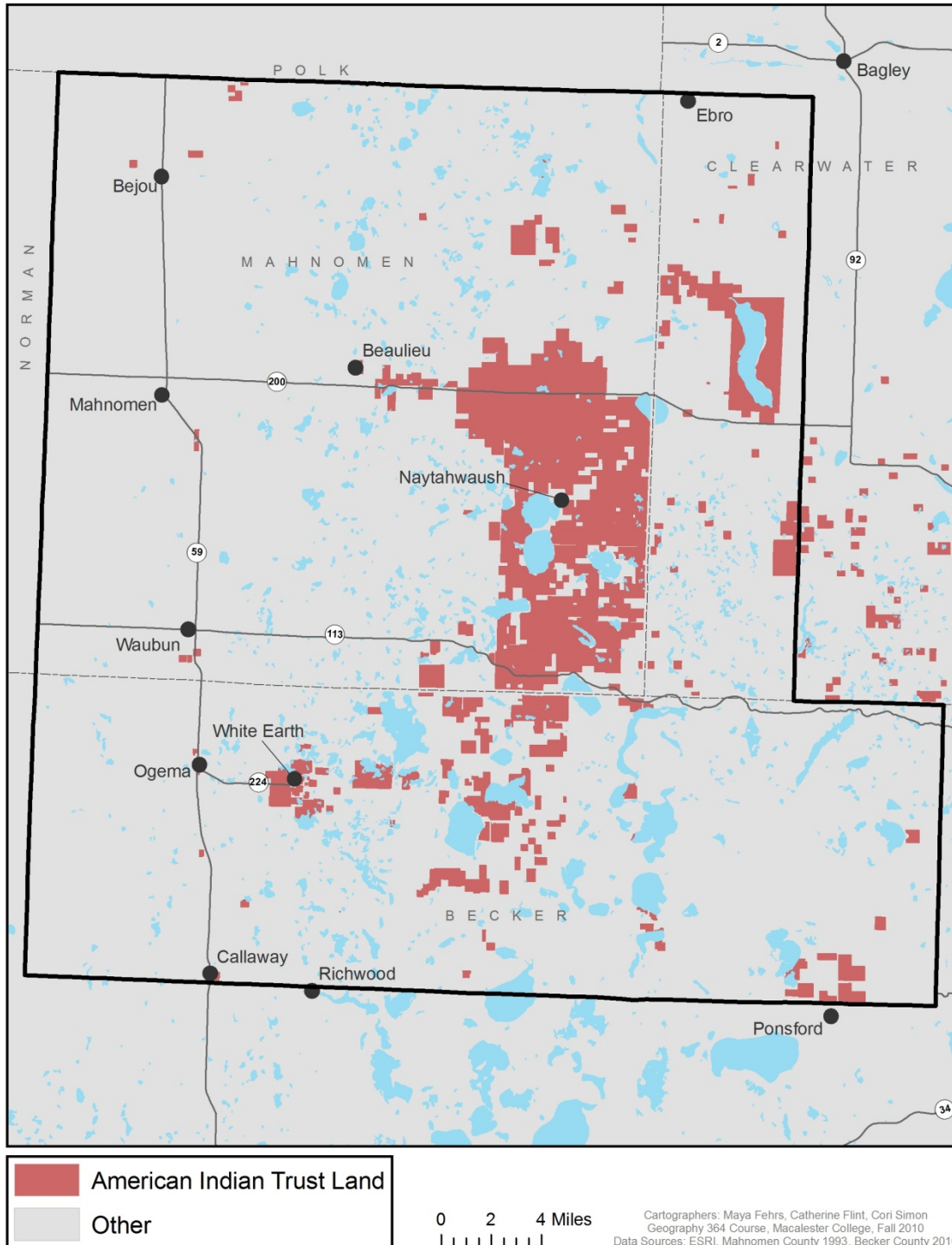
Figure 6.1 is a general map of White Earth Reservation and important features on and around the reservation. The inset map shows the location of the reservation in the northwestern part of the state of Minnesota, as well as its relation to major cities in the state. The map also shows the reservation boundaries, county boundaries, major roads in the area, and major cities and towns within and on the boundaries of the reservation. Also depicted are lakes and rivers within and outside the reservation. The map shows that the reservation is part of three different counties and contains several as well as three major highways.

AMERICAN INDIAN TRUST LAND

The trust land shown in the “American Indian Trust Land” map (See Figure 6.2) shows all land held in trust on the White Earth Reservation. It is important to note that these data come from two sources and two time periods. The data used to create this map originates from 1993 data from Mahnomen County, and 2010 data from Becker County. The Becker County data only covered land tenure information in Becker County, and so the rest of the map data in Mahnomen and Clearwater counties use the 1993 data. American Indian trust land, indicated in light red, is concentrated in the eastern and central portions of the White Earth Reservation. Overall, a strong east-west divide is apparent, with the majority of American Indian Trust land in the east and “unknown” land, probably non-trust land, in the west. While the trust land in the east-central portion around Naytahwaush is relatively contiguous, the majority of American Indian trust land is checkerboarded. The small amount of trust land on the western portion exists in much smaller, isolated parcels, and tends to follow Highway 59. No trust land is shown in the city of Mahnomen where the Shooting Star Casino lies, which may be attributed to outdated data sources. Another portion of western trust land clusters around the city of White Earth, the area where Ojibwe first settled after the creation of the reservation and where the White Earth Tribal Council office is now located. Outside of the reservation boundary, in the townships that were removed from the reservation by the 1979 court case, small clusters of parcels are held in trust but in no contiguous pattern. By far, the most contiguously held trust land clusters around the lakes in the central portion of the reservation.

Figure 6.2: Indian Trust Land

Indian Trust Land - White Earth Reservation



POPULATION DENSITY

Figure 6.3 shows the population density (the amount of people living in a square mile) for the White Earth Reservation in 2000. The map shows the data broken up by block group, with higher population densities in darker colors. The spatial pattern of population density on White Earth Reservation is not as clear as some of the subsequent maps. However, block groups with higher population densities are near White Earth Township and the city of Mahanomen. These areas have services such as health clinics and the Tribal College; it is logical that people choose to live near these places. Most of the reservation has very low population density, less than 7-13 people per square mile. From prior research and the other maps in this section, we expected to see an east-west divide along the reservation, but this is not evident for population density.

RACE

Figure 6.4 shows the percent of American Indians living in each block group on White Earth Reservation in 2000. Darker colors designate higher percentages of American Indians. The map shows that almost all of the block groups on the reservation have a population of at least 10-25 percent American Indian, well above the Minnesota average of 1.6 percent. This map shows clearly that there are many more American Indians living on the eastern side of the reservation than the western side. Exceptions include two block groups that have a high percentage of American Indians and are located on the western side of the reservation. One reason why this may be is that White Earth Township (the location of the Tribal Council) and Mahanomen city (location of the Shooting Star Casino) are located near those block groups and may be the reason why higher numbers of American Indians live there.

Figure 6.3: Population Density

Population Density by Block Group

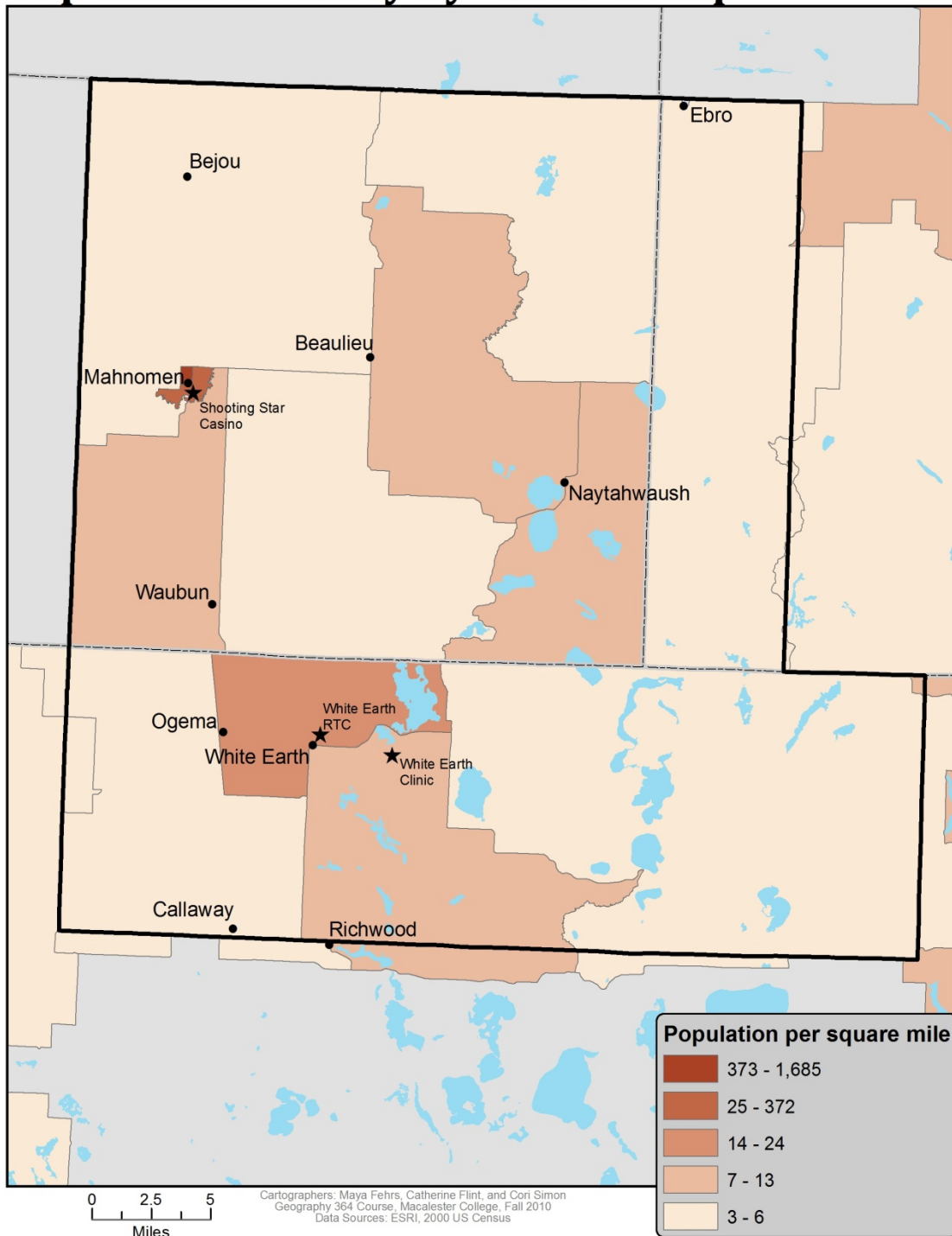
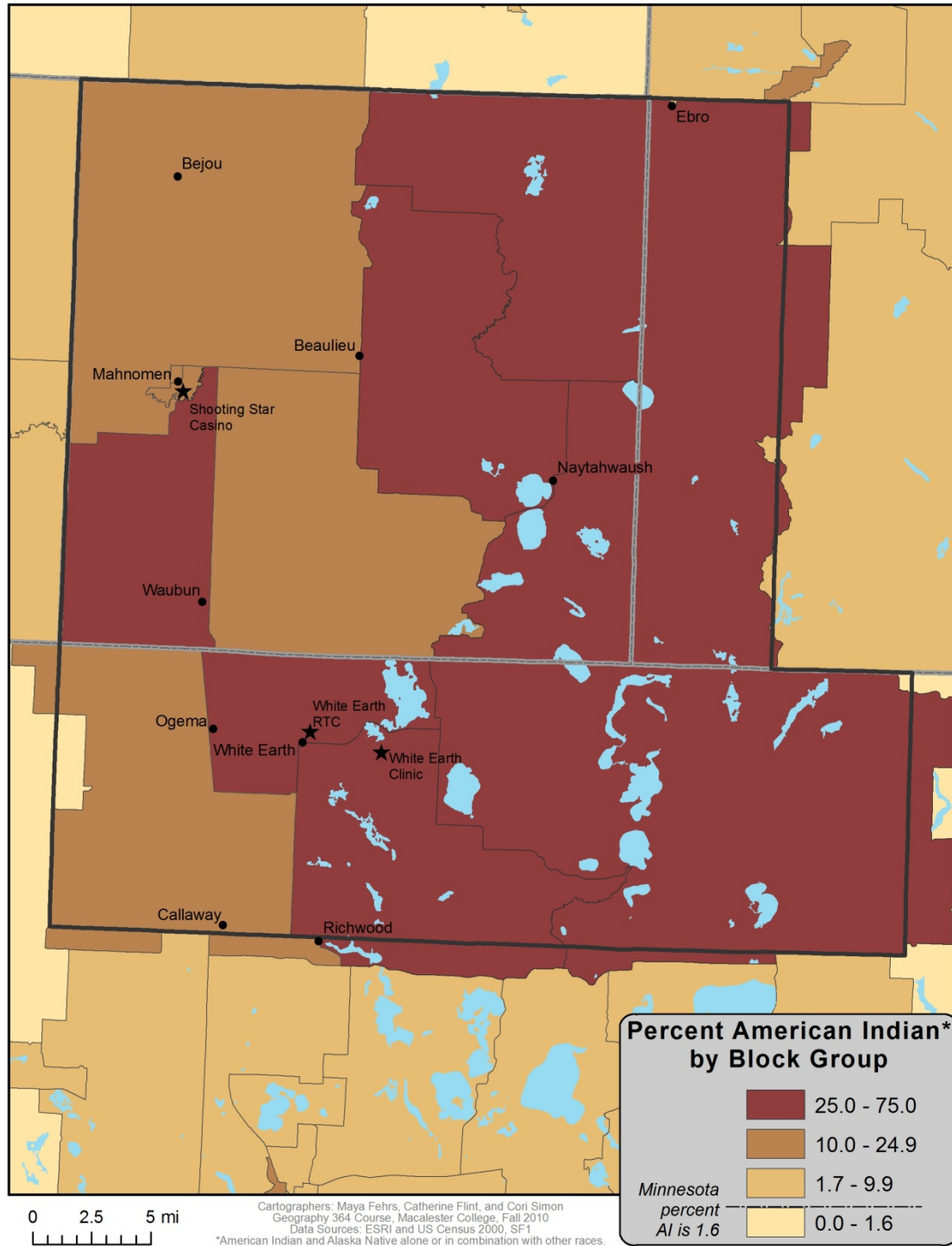


Figure 6.4: Race

Percent American Indian - 2000



MEDIAN HOUSEHOLD INCOME

Figure 6.5 shows the median household income of each block group on White Earth Reservation in 2000. A darker green color designates a higher median household income. This map also shows an east-west divide, as the western side of the reservation has a higher median income than the eastern side. Two very small block groups on the western side show a lower median household income. One of the block groups includes Mahnomon city, the location of the Shooting Star Casino and the Tribal College.

POVERTY

Figure 6.6 shows the percent of the population living below the poverty line in each block group in White Earth Reservation in 2000. A darker purple color shows higher percentages of people living below the poverty line. The map shows that the majority of the block groups have a higher percentage of poverty than the Minnesota average of 7.9 percent. This map also shows an east-west divide, with the highest percentages of poverty grouped on the eastern side of the reservation. As shown in Figure 6.4, the eastern side of the reservation also has the highest percentages of American Indians.

Figure 6.5: Median Household Income, 1999

Median Household Income - 1999

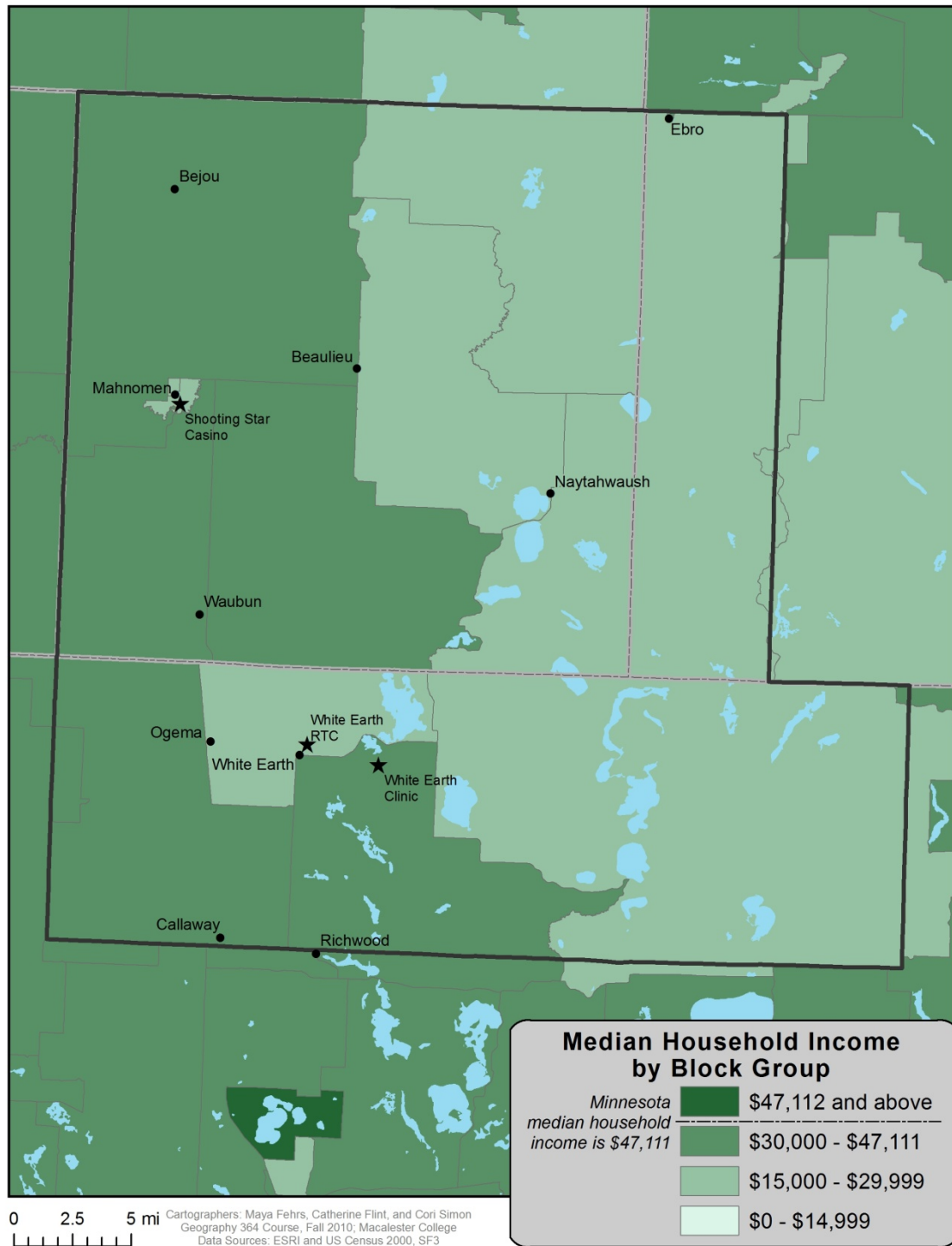
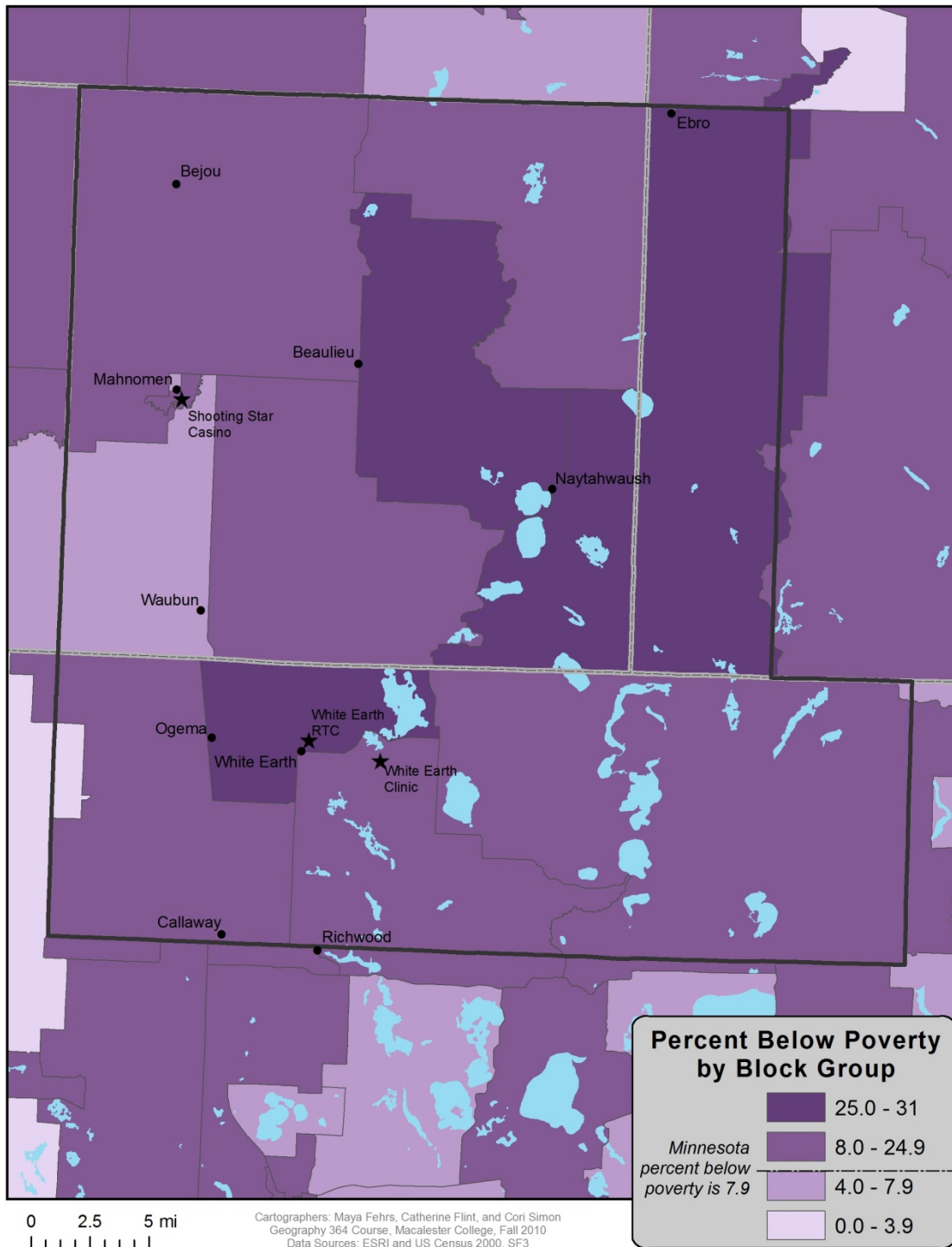


Figure 6.6: Percent Below Poverty, 2000

Percent Below Poverty – 2000

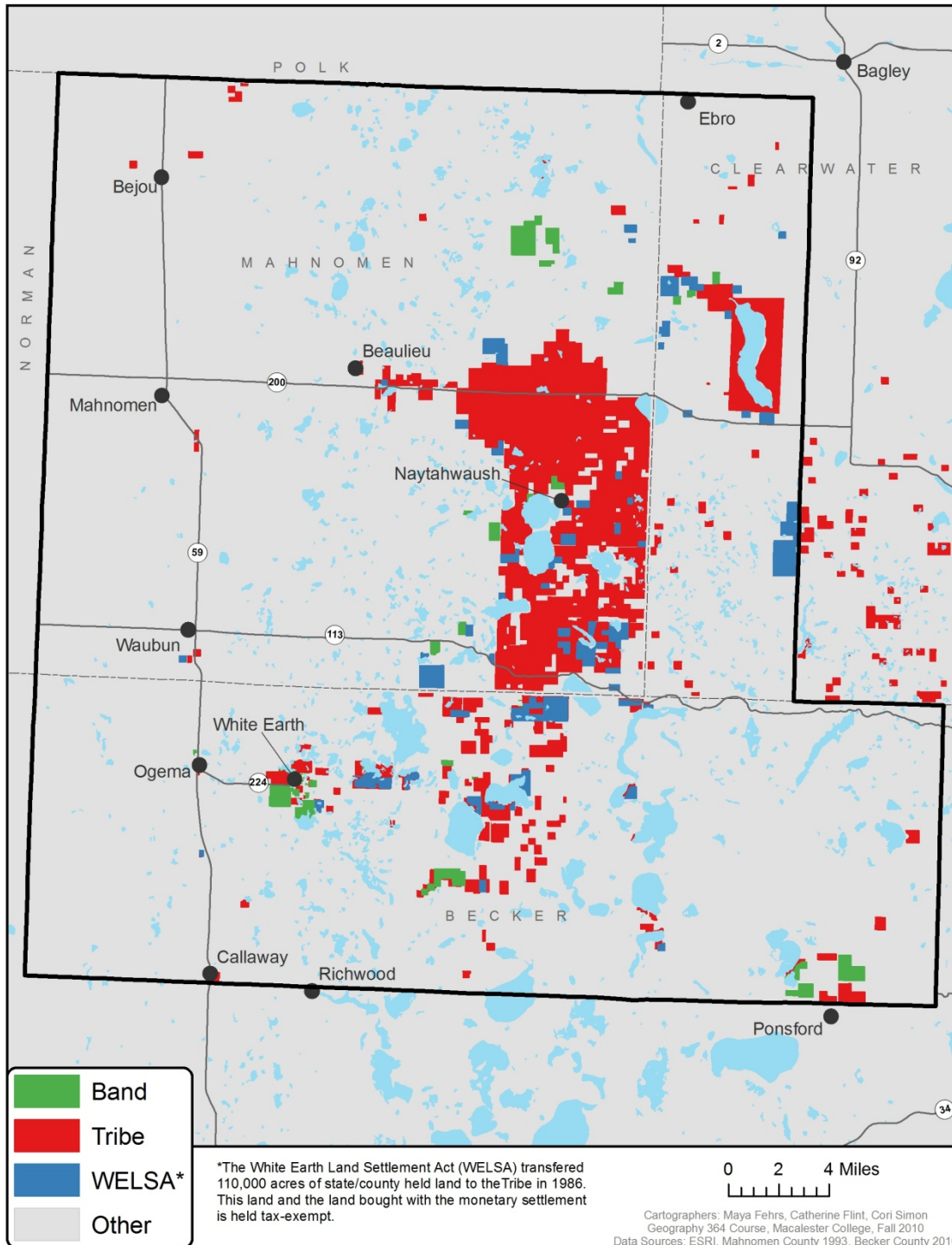


INDIAN TRUST LAND

The trust land shown in the “Detailed Indian Trust Land” map (Figure 6.7) depicts all land held in trust on the White Earth Reservation broken down by the specific indigenous entities for whom the land is held in trust. These data are based on 1993 files from Mahnommen County and 2010 files from Becker County. The majority of the land in trust is held by the Minnesota Chippewa Tribe, as indicated in red. Most of the contiguous land base is held in trust for the tribe. All of the land held in trust before the Indian Reorganization Act of 1930 was put in trust for the tribe which established its constitution at this time (Minnesota Chippewa Tribe 2010). The land held in trust for the White Earth Band and land put in trust through WELSA is more sporadic with fewer contiguous parcels, but they do tend to border lands held in trust for MCT, showing a continued focus toward gaining a more contiguous land base with more recent land acquisitions. As discussed for the previous map, most of the trust land clusters in the eastern and central portion of the reservation, but one cluster of Band trust land lies in the northwestern portion of the reservation.

Figure 6.7: Indian Trust Land

Detailed Indian Trust Land - White Earth



LAND TENURE MAP

The “Land Tenure – White Earth Reservation” map (Figure 6.8) shows a detailed display of land tenure on the White Earth Reservation. There are more detailed land tenure data available for Becker County, and these data show that much of the land in the county is privately owned (shown in green). From what we can see from the 1993 data, much of the land ownership status on the rest of the reservation is unknown (shown in gray). As the previous trust land maps indicate, American Indian Trust Land (shown in red) remains predominately in the eastern and central portions of the reservation. A large section of federal land (yellow) is situated in the south-central to southeastern section of the reservation, which is held primarily for the Tamarak Wildlife Refuge. A contiguous section of state owned land (blue) indicates a large State Forest that exists inside and outside the eastern reservation boundary. The municipality (county or city shown in purple) is also held contiguously in the south-central portion of the reservation. Very little private American Indian land is shown, though this can be attributed to a lack of this detailed category in the Mahnomen and Clearwater data sets.¹

LAND COVER

The “Land Cover” map (Figure 6.9) shows a strong east-west divide between forest (green - eastern section of reservation) and agricultural land (tan - west). The eastern portion of the land is mostly forested, with wetlands (dark blue) dispersed around the central lakes area. Small areas of shrubs and grassland (light green) also cluster on the edges of forest and lakes. The one exception to this pattern is in the southeastern corner where agricultural land clusters near the town of Ponsford. The majority of lakes and other water bodies lie in the central and eastern parts of the reservation. The western portion of the reservation is predominantly agricultural, with small, concentrated areas of wetlands dispersed throughout. The only visible developed area (gray) is in this western portion near the town of Mahnomen, which can be attributed to the construction of the Shooting Star Casino. Small, straight lines of gray indicate developed roads throughout the reservation. At this scale, barren land does not comprise any significant portion of the land.

LAND COVER WITH LAND TENURE

In Figure 6.10, the American Indian trust land shown in gray diagonal lines was placed over the previous land cover map in order to determine which types of land are held in trust on the reservation. By far, the majority of land in trust is held around lakes or forest on the central and eastern portions of the reservation. A smaller portion of land held in trust is covered by wetlands. The only agricultural land held in trust is in the southeastern corner near the town of Ponsford, and the southeastern town of Callaway. All off-reservation trust land is forested. On the western side, the trust land concentrates around the town of White Earth, and appears forested, though small levels of development are assumed because of

¹ 1993 data from Mahnomen County, in the form of a paper map, only provided data for American Indian land tenure in the categories of White Earth Band, Minnesota Chippewa Tribe, and WELSA ownership. These data covered the entire reservation extent. However, complete land tenure data was provided by Becker County, but only for the portion of the reservation within Becker County boundaries.

the Tribal Council Office. Because these areas of development are so small and concentrated around individual townships, they may be hard to see on a map of the entire reservation.

Figure 6.8: Land Tenure

Land Tenure - White Earth Reservation

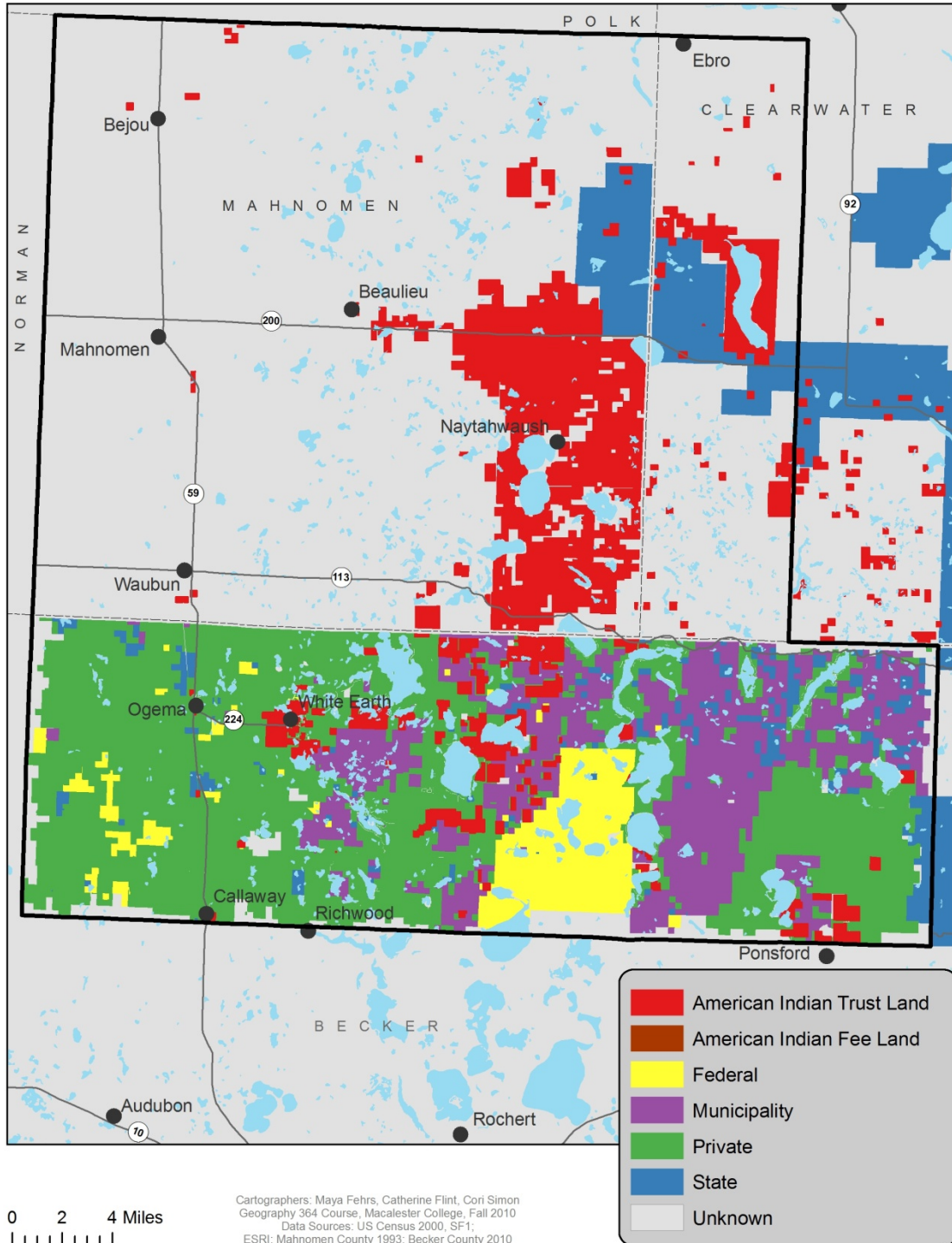


Figure 6.9: Land Cover

Land Cover - White Earth Reservation

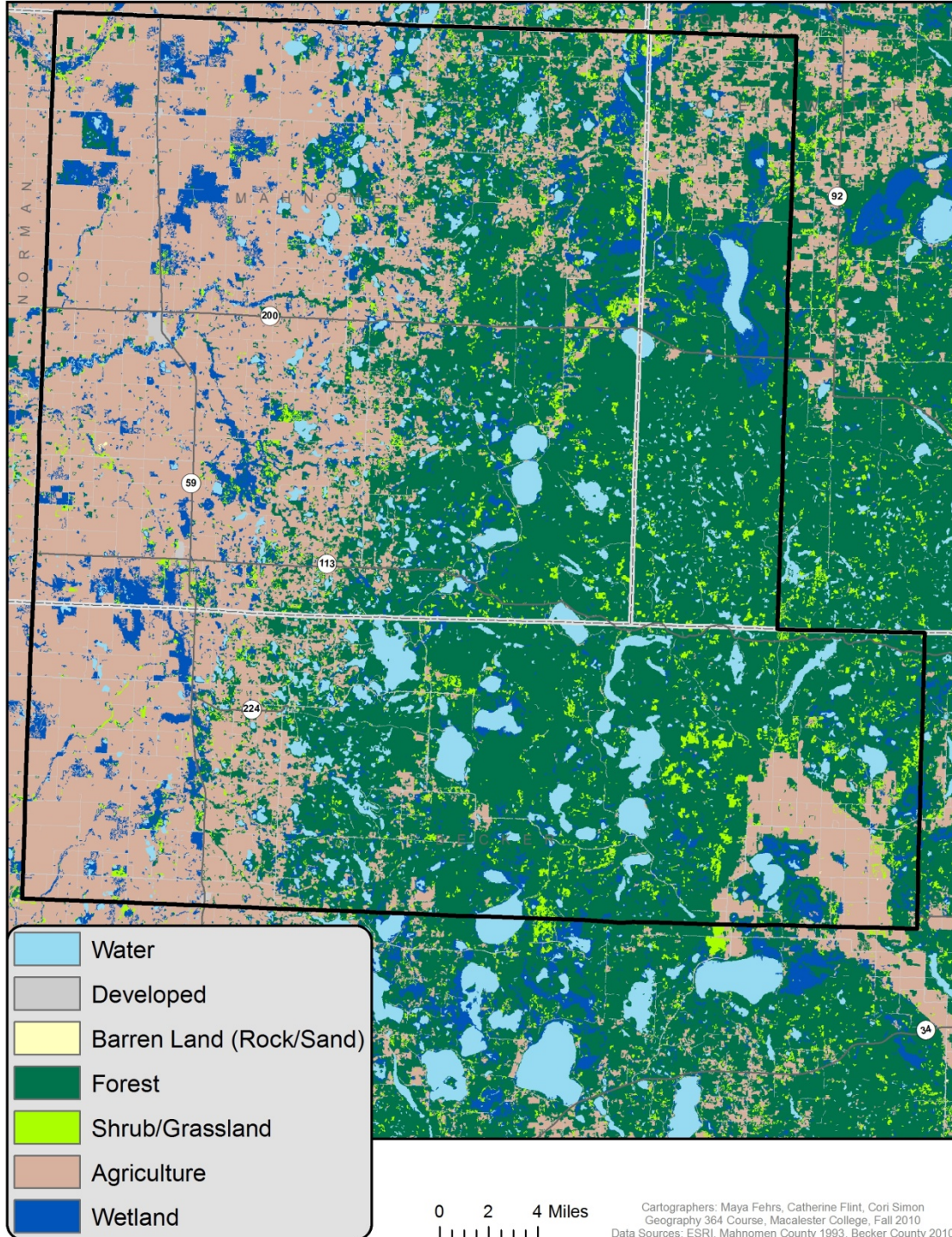
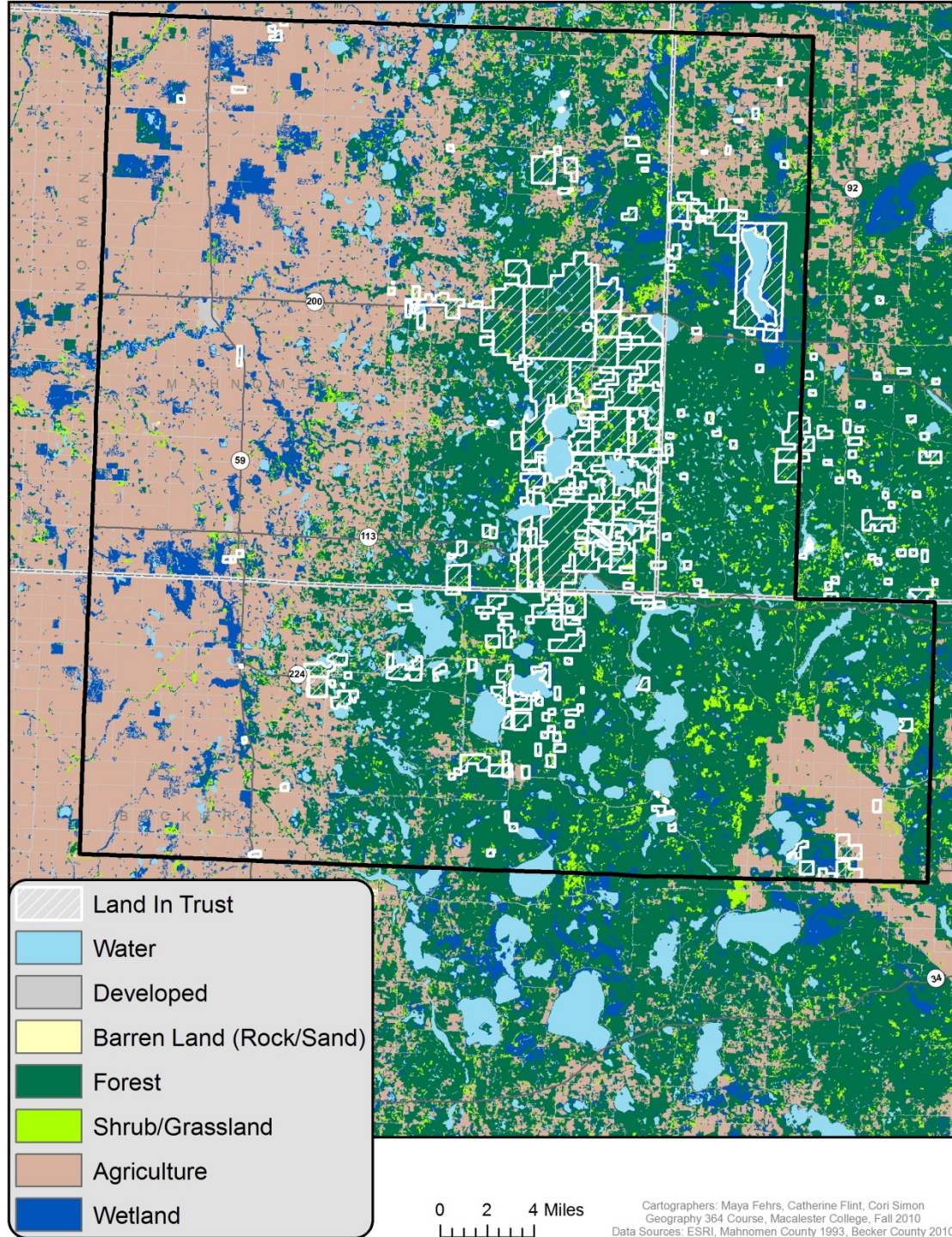


Figure 6.10: Trust Land Cover

Trust Land Cover - White Earth Reservation



MEDIAN INCOME IN 1990, 2000 AND 2006

This map series shows how median household income on the reservation has changed from 1990 to 2006. The median household income values have been adjusted for inflation using the currency in 2000 as the base year, therefore it is possible to draw conclusions about changes in median household income across the time series. Median household income is represented at the block group level; darker blue colors represent higher median household incomes while lighter colors indicate lower median household incomes. In each of the three maps, the median household incomes on the western portion of the reservation are noticeably greater than the median household incomes on the eastern portions of the reservation. This pattern supports the findings in map 6.5 which also shows greater median household incomes on the western portion of the reservation in 2000, though that map uses different median income classification values. The change in median household income from 1990 to 2006 shows a general increase in income across the region, especially in the central portion of the White Earth Reservation.

Map 6.11: Median Household Income, 1990

Median Household Income - 1990

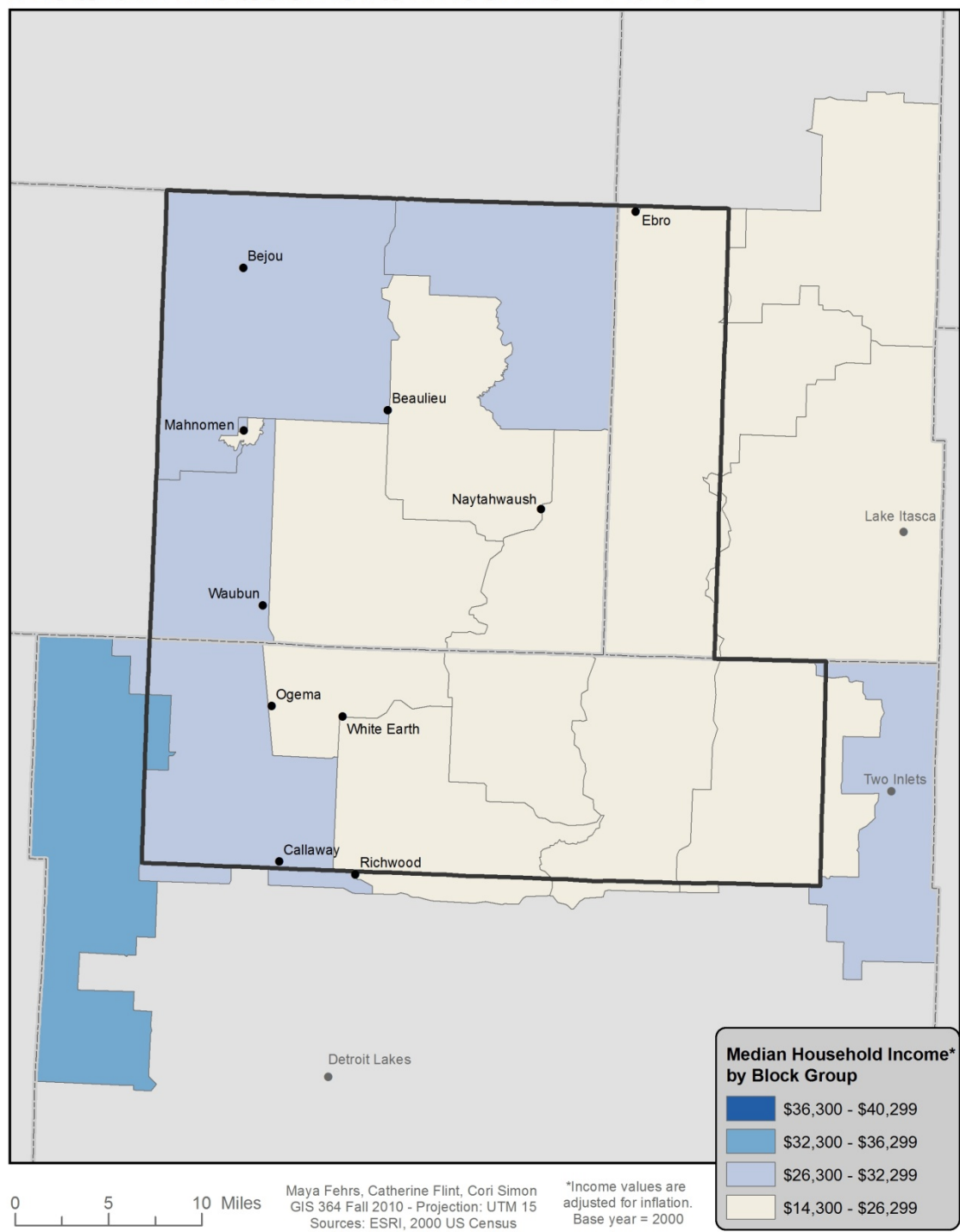


Figure 6.12: Median Household Income, 2000

Median Household Income - 2000

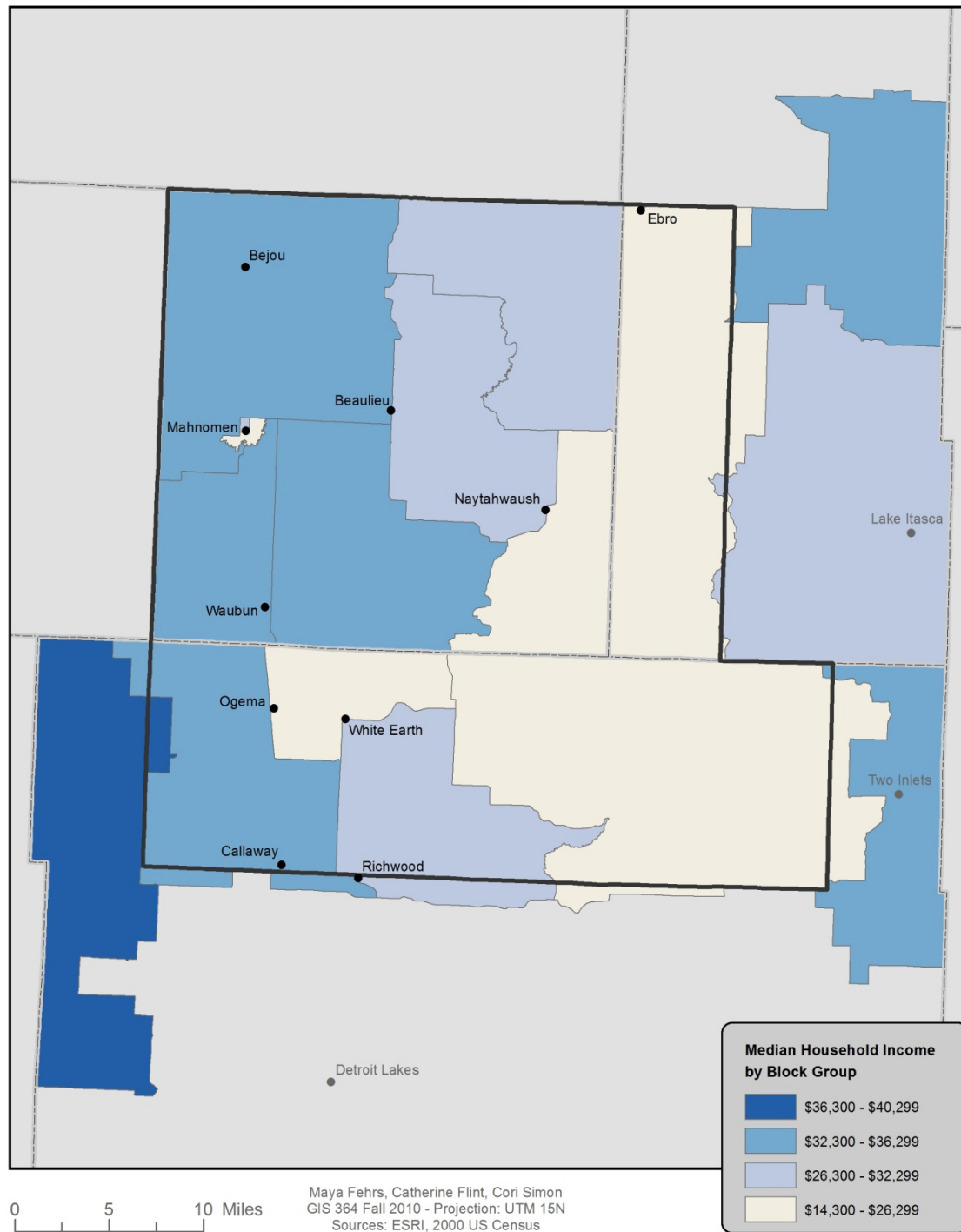
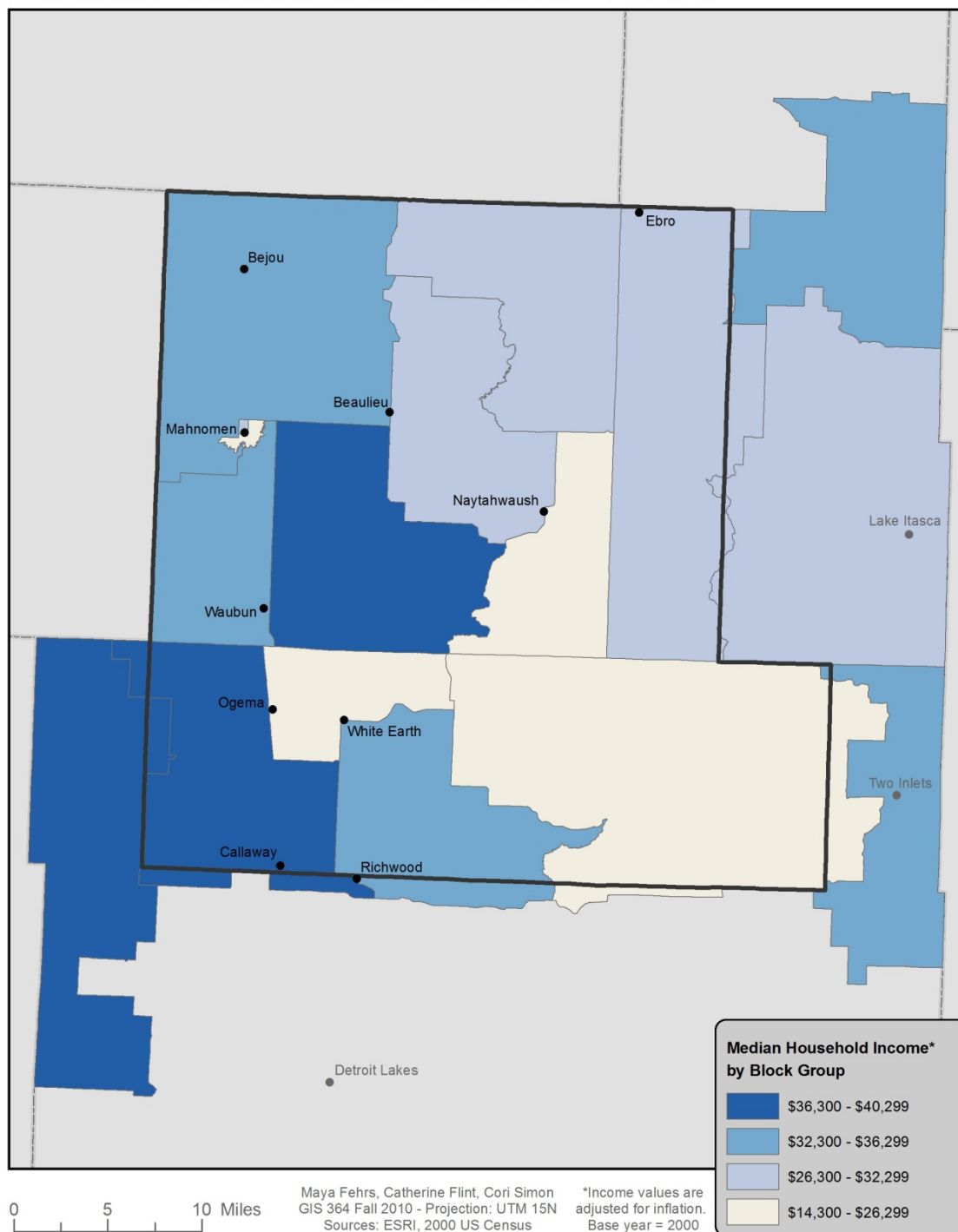


Figure 6.13: Median Household Income, 2006

Median Household Income - 2006



EDUCATIONAL ATTAINMENT IN 1990 AND 2000

The Educational Attainment map series (Figures 6.14 and 6.15) shows the percentage of individuals over the age of twenty-five in each block group that have obtained at least a high school degree or its equivalent; this includes individuals who have an Associates, Bachelors, Professional, or Doctoral Degrees also. Darker shades of blue show block groups with higher percentages of individuals who have at least a high school degree, while lighter shades of green show block groups with lower percentages of individuals who have at least a high school degree. Almost all the block groups show an increase in educational attainment from 1990 to 2000. However, in both the 1990 and 2000 maps there are at least slightly greater percentages of individuals with at least a high school degree on the west side of the reservation than the east side of the reservation. The percentage of individuals over the age of twenty-five with at least a high school degree is less than the state and national levels of educational attainment. In 1990 the educational attainment in Minnesota was 82.4 percent and nationally it was 75.2 percent, however almost all the levels of educational attainment on the reservation were between only 53.4 percent and 73.3 percent (Brown 2003). In 2000, the educational attainment in Minnesota was 87.9 percent and nationally it was 80.4 percent (Brown 2003). While there were substantial increases in educational attainment on the reservation, none of the block groups on the reservation had greater than 86.7 percent of individuals over the age of twenty-five with at least a high school degree.

WHITE EARTH PUBLIC TRANSIT SYSTEM MAP

Figure 6.16 is a transit map detailing the route of the White Earth Public Transit System. The map shows the Detroit Lakes route in red, the Rice Lake route in purple, and the Pine Point route in green. The map shows the location and names of the stops and also designates which stops are also Park and Ride locations. The map shows that most of the stops are within the reservation boundaries, although there are a few to the south. The majority of the stops are on the western side of the map, and all of the routes service important locations such as the White Earth Clinic, the White Earth Reservation Tribal Council, and the Shooting Star Casino.

Figure 6.14: Educational Attainment, 1990

Educational Attainment - 1990

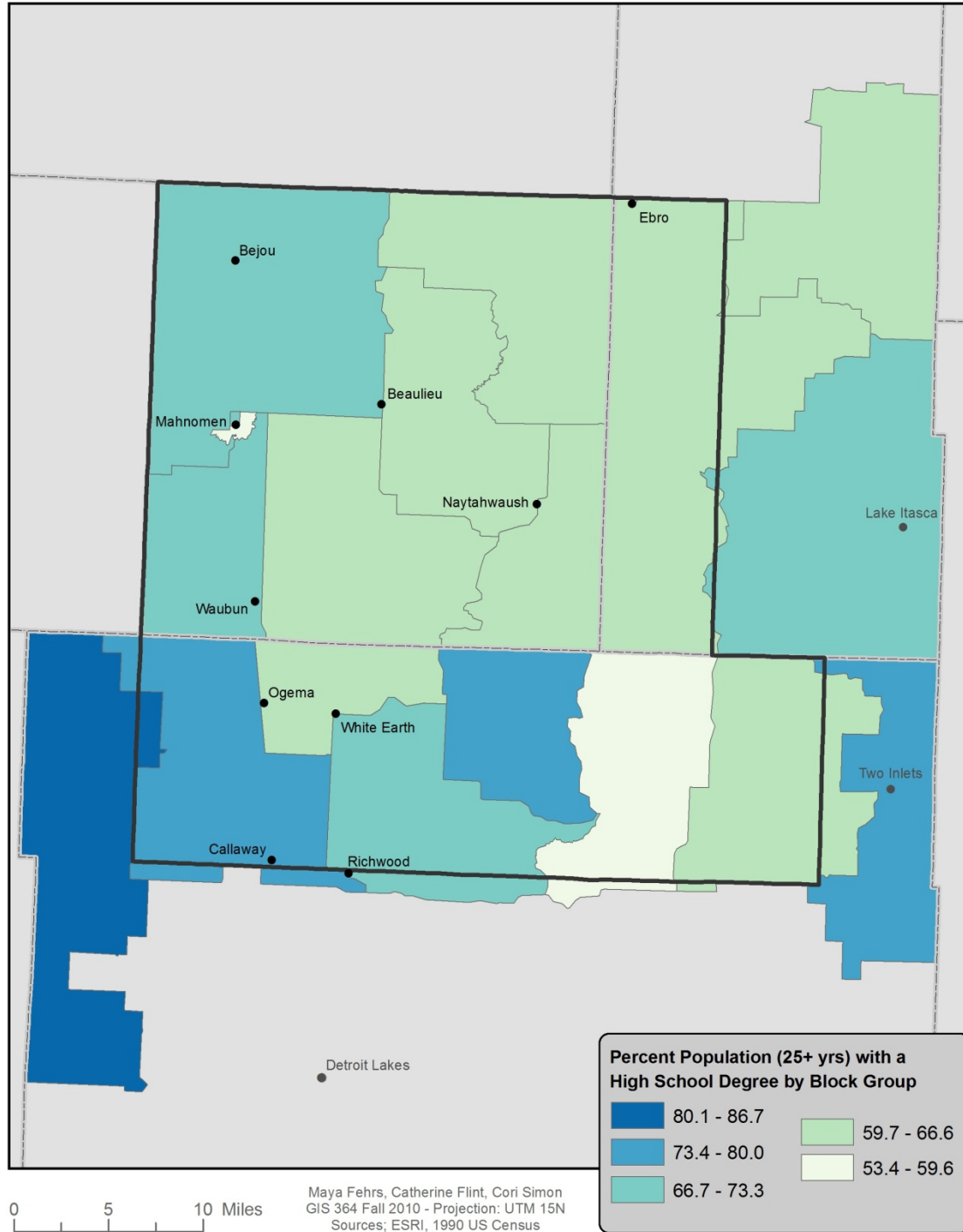


Figure 6.15: Educational Attainment, 2000

Educational Attainment - 2000

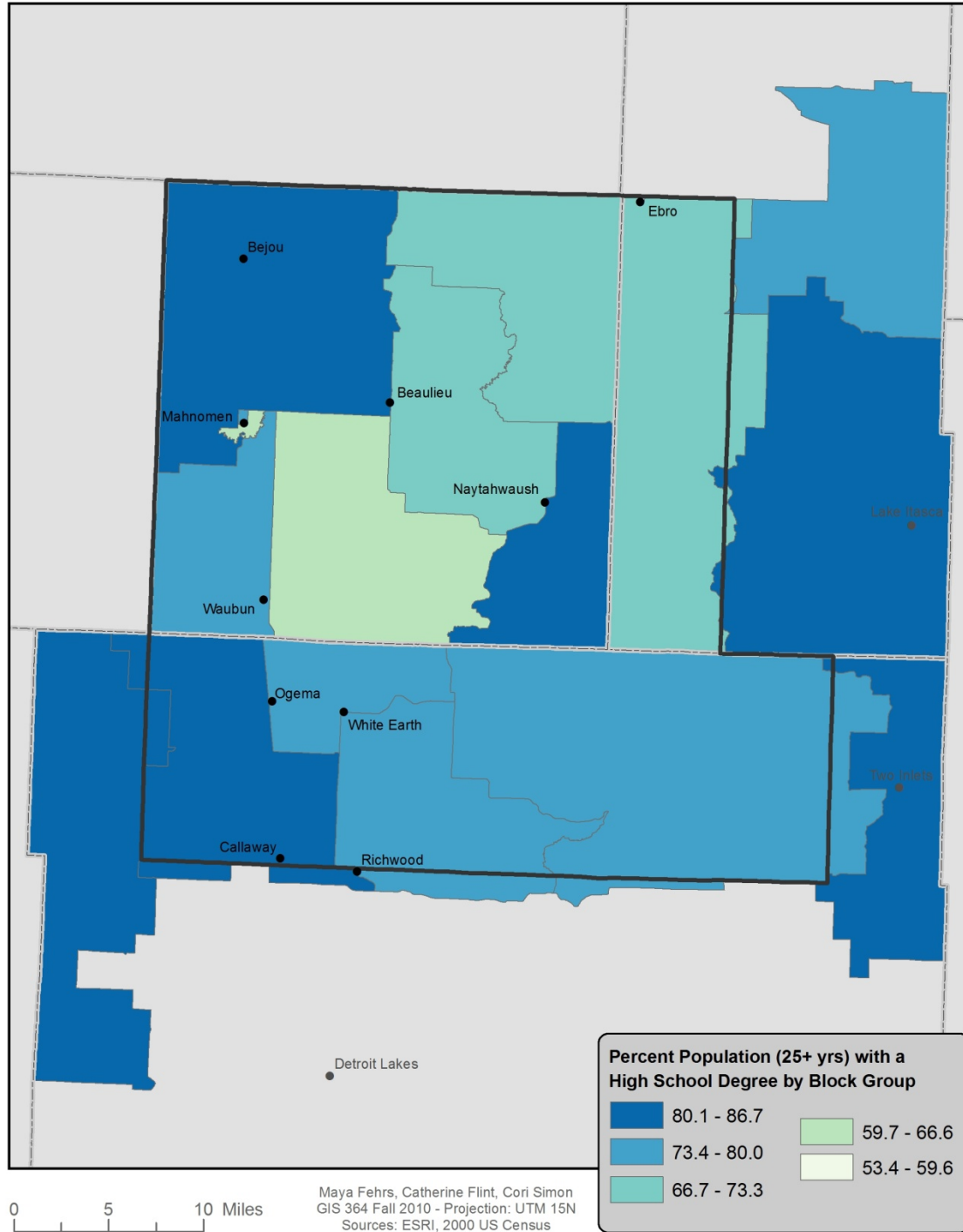
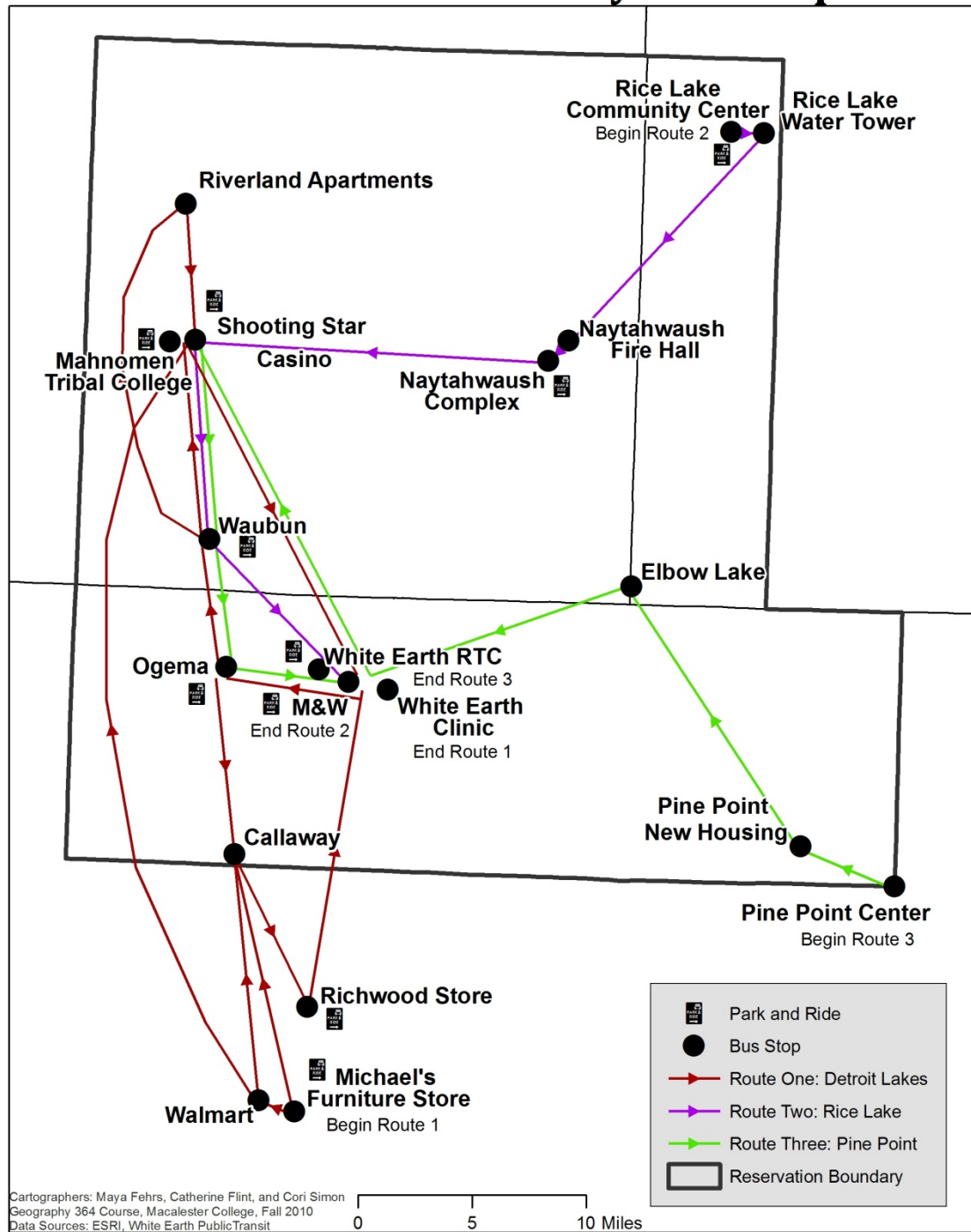


Figure 6.16: Public Transit

White Earth Public Transit System Map



CONCLUSIONS

The most striking trend across all of the maps was a divide along the eastern and western sides of the reservation. The western side shows relatively higher levels of median income, lower levels of poverty, and that a lower percentage of the population is American Indian. Although the spatial patterns for educational attainment are not as clear, in general the western side of the reservation shows higher levels of educational attainment. As shown in the land cover map, the eastern side of the reservation is largely forested, while the western side is agricultural. The western side of the reservation also has very little land in trust and is much more developed than the eastern. There are two major highways that run across the reservation east-west, but only one that runs north-south, and it is located on the western side of the reservation. The White Earth Public Transit system focuses on the western side of the reservation. Highways and the transit system make the western side much more accessible and connected than the eastern side. Locations of importance on the western side of the reservation include the Shooting Star Casino, the Tribal Council, the Health Clinic, as well as many other businesses of note.

The Shooting Star Casino opened in the early 1990s, by using data from 1990 and from 2000, we looked for a relationship between the new casino and any changes in median income or education status. While it is difficult to say what effect the casino had on these variables, the casino is located on the western side of the reservation and fits the general trend of greater development on that side. The White Earth Public Transit system connects the casino to other important locations including several housing developments. The block groups immediately surrounding the casino do not have a higher median household income than surrounding areas; however, there is a lower percentage of poverty in surrounding block groups. There is one block group near to the casino that has a higher number of American Indians than surrounding block groups; this may be connected to job opportunities offered by the casino.

Most of the trust land is on the eastern side of the reservation, although there is some land in trust around White Earth Township, which may explain why this particular block group shares many characteristics with the eastern side of the reservation despite being on the western side. Trust land is heavily concentrated on the eastern and central regions of the reservation. It is clear from the pattern of what land is in trust that the band appears to be interested in consolidating land, especially around lakes.

The east-west divide on the reservation is significant because it is evident in land use patterns, location of trust land, and various social indicators. Trust land is located on the eastern and central part of the reservation, which is largely forested and clustered around lakes. This area also shows a higher percentage of American Indians, lower median household income and higher rates of poverty. It is also much less developed and less served by the transit system. While it is difficult to make clear statements regarding the location of lands in trust, there appears to be spatial similarities between trust land, development, race, and economic status. Further research about lands in trust on White Earth Reservation can focus on the relationship between the location of trust land and development patterns and the various social indicators detailed in this chapter.

GRAND PORTAGE AND BOIS FORTE INDIAN RESERVATIONS

INTRODUCTION

The Grand Portage and Bois Forte Indian Reservations are both located in extreme northeastern Minnesota. This scenic area, heavily forested and replete with lakes, streams, and stunning views of Lake Superior, has been the home of Grand Portage Band of Lake Superior Chippewa and the Bois Forte Band of Chippewa for centuries. The Chippewa, or Ojibwe, people migrated from the East Coast of the U.S. along the St. Lawrence River and around the Great Lakes to what is today northeastern Minnesota, reaching the area by the early to mid-1700s (Minnesota Indian Affairs Council-Grand Portage 2010).

Both reservations were established by the 1854 Treaty of La Pointe. This treaty ceded all of the Lake Superior Ojibwe lands in the Arrowhead Region of northeastern Minnesota to the United States. Grand Portage and Bois Forte, along with the other signatory tribes, retain hunting, fishing and gathering rights within this region. The 1854 Treaty Authority, run by the Grand Portage and Bois Forte bands, was created to protect, preserve, and enhance these lands, their resources, and the rights both bands have over them (1854 Treaty Authority 2010).

BOIS FORTE RESERVATION

The Bois Forte Reservation is home to the Bois Forte Band of Chippewa. Located in Koochiching, St. Louis, and Itasca counties and divided into three sections (Vermilion, Nett Lake, and Deer Creek), the reservation is one of Minnesota's most northern, approximately 40 miles south of the Canadian border (Minnesota Indian Affairs Council 2010). As Figure 7.1 shows, the sections surround or border several lakes, and "50 percent of the Nett Lake sector is wetland and is said to be the largest producer of wild rice in the United States" (Bois Forte Band of Chippewa 2010).

The Bois Forte people journeyed from the east coast and ended up in what is today the Grand Portage area. During the early years of fur trading with non-Indians, the Bois Forte people followed lakes and rivers further inland, finally settling near the mouth of the

Vermilion River in what is today the Vermilion section of the reservation (Minnesota Indian Affairs Council-Bois Forte 2010).

The 1854 Treaty of La Pointe was the first treaty the community entered into with the United States government. It set aside an undefined region around Lake Vermilion as a reservation. However, later treaties and agreements resulted in the reservation boundaries being established as they are known today. The Nett Lake and Deer Creek regions were officially established in an 1866 treaty, and the Lake Vermilion lands were defined in an 1881 executive order (Minnesota Indian Affairs Council-Bois Forte 2010).

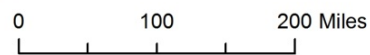
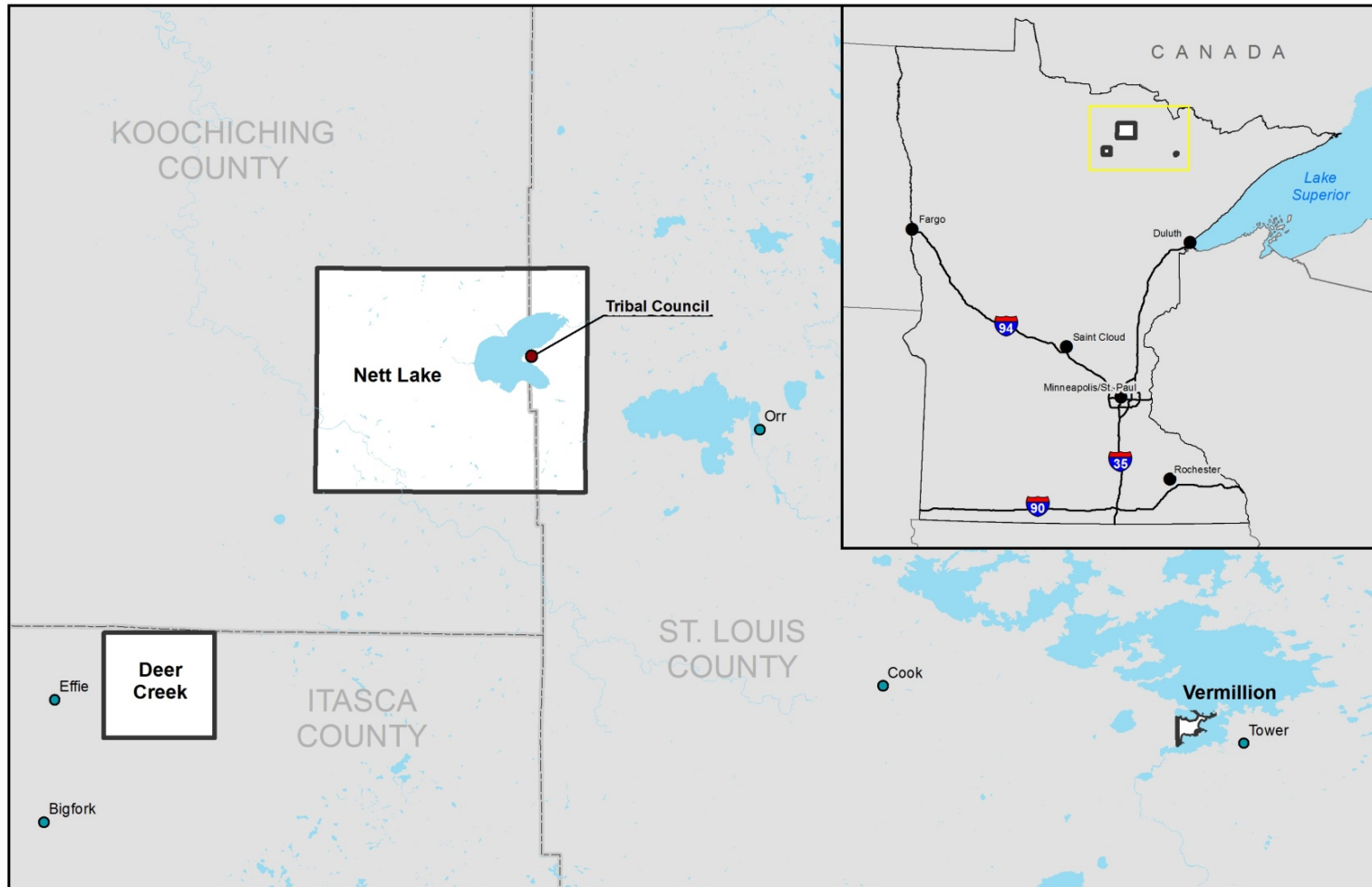
There are three non-contiguous geographic areas that comprise Bois Forte Reservation. Nett Lake, in Koochiching and St. Louis counties, is the largest area of the reservation, home to the majority of Bois Forte Band members, the tribal government headquarters, a community center, and the wild rice lake which bears the same name. Vermilion, in St. Louis County, is located on a small section of land on the shore of Lake Vermilion (Bois Forte Band of Chippewa 2010). It contains the Fortune Bay Resort Casino, as well as a family wellness center, a community center, and health/dental clinics (Minnesota Indian Affairs Council-Bois Forte 2010). The last section, Deer Creek is a section of land in Itasca County, but was not included in this analysis, as no Band members currently live there.

Much of the tribe's success in funding vital programs and services is a result of the success of the Fortune Bay Resort Casino. It employs over 550 people, annually injecting more than \$30 million into the economy of northeastern Minnesota (Bois Forte Band of Chippewa 2010). Fortune Bay is a full service resort including a hotel, conference center, casino, restaurants, marina, RV campground, and a nationally award winning Heritage Center and Wilderness Golf Course. Under the management of the Bois Forte Development Corporation, the band has worked to diversify its business portfolio; it now owns a variety of enterprises and stores (Bois Forte Band of Chippewa 2010).

Figure 7.1: Bois Forte Reference Map



Bois Forte Reservation



Cartographers: Sidney Ainkorn, Jessie Sweet, David Tomporowski
Geography 364 Course, Macalester College, Fall 2010
Data Sources: US Census 2000, ESRI,
David Grinstead (Grand Portage Trust Lands GIS Lab)

GRAND PORTAGE RESERVATION

Located in the extreme northeastern tip of Minnesota, the reservation is bordered by Lake Superior to the southeast, the Superior National Forest to the west, and Canada to the North (See Figure 7.2).

The Grand Portage Ojibwe, like the Bois Forte Ojibwe, migrated from the East Coast of the U.S.. Unlike the Bois Forte members however, the Grand Portage band members stayed near Lake Superior, settling along its northwestern shore. The area eventually became an important site of fur trade between Native Americans and fur traders who were traveling between the East Coast and the inland forests west of the Great Lakes. The Pigeon River acted as an important waterway between the Great Lakes and the forests, except for a large waterfall that inhibited travel. It was necessary to portage around the waterfall, and a nine-mile portage trail was eventually established. This portage (from which the reservation gets its name), along with the fur trade, made Grand Portage an important crossroads in history.

The French began a record of fur trade over the portage in 1731. The British took over in the 1760's and their North West Company built a trading post at Grand Portage around 1785. About 150 Ojibwe families lived in the vicinity of the trading post. In 1803, the British were forced to move their company north when the Grand Portage area officially became part of the United States as a result of the newly created boundary along the Pigeon River. The post was moved to Fort William, Canada, which is known today as Thunder Bay. However the Indian community that provided services and trade at the Grand Portage site continued working with the British in Canada. Today, close ties continue with the Ojibwe in Canada since the border often splits extended families (Minnesota Indian Affairs Council-Grand Portage 2010).

The 1854 Treaty of La Pointe established the reservation as it is known today. During the allotment era, no serious attempt was made to relocate the people of Grand Portage to White Earth. However, virtually the entire reservation was taken from tribal control. According to the Grand Portage Land History Information System Project, 24,436 acres were designated for allotment to 310 individual Band members of all ages and 16,075 acres were taken by the U.S. government and opened to homesteading. By 1932 the Band had no land base and only about 6,500 acres remained allotted to Band individuals and their heirs (ILTF et al. 2006). The Indian Reorganization Act of 1934 and the Grand Portage Land Acquisition Project began the process of buying back allotments that had become non-Indian and privately owned. Since the opening of the Grand Portage Lodge and Conference Center in 1991, the subsequent revenues generated have accelerated the purchase of lands back into Band ownership. In 2006, 6,238 acres remained fractionated allotments in trust; 38,239 acres were Band and Tribal trust land; 1,250 acres were state or federal government owned; 1,000 acres were private non-Indian; and 1,897 acres were recent Grand Portage Tribal Council in the process of being put into trust status (ILTF et al. 2006).

Because of the historical importance of the portage and the fur trade at Grand Portage, a National Monument was established as part of the Grand Portage State Park. The Park itself was created in 1989 via cooperation between the State of Minnesota and the Band. It is the only U.S. state park jointly managed by a state entity and a Native American band (Lien, 2000).

The monument, managed by the National Park Service, is the result of a long negotiation process between the federal government and the Band. The process started in 1958 when the Band donated the land to the NPS, hoping a new visitor center and museum would revitalize the region's economy. Today, the Grand Portage National Monument Heritage Center, a 16,000 square foot, four million dollar building completed in 2007, houses exhibit galleries about Ojibwe culture and the fur trade, a bookstore, multi-media programs, park offices, archives and a classroom (National Park Service 2010).

Beyond the state park and national monument, the area is accessible and has much to attract tourists. Scenic U.S. Highway 61 runs through the reservation, acting as a main thoroughfare between Duluth and Canada. Many people make the drive just to observe the beautiful, rugged shoreline of Lake Superior, or the heavily forested landscape. A border crossing into Canada exists at the northern end of Highway 61. The boat to Isle Royale National Park in Lake Superior leaves from the City of Grand Portage, where the tribal headquarters, community center, and casino are located. Built under an initiative by the Grand Portage Development Corporation (established in 1971 to spur economic development), the Grand Portage Lodge and Conference Center is a strong source of employment and income for the area. It is a 100-unit hotel with gaming, conference facilities, an indoor pool, a marina, and a campground (Minnesota Indian Affairs Council-Grand Portage 2010).

The Gitchee Onigaming Community Center, built in 1994, offers a wide variety of recreational activities, a swimming pool, a senior center, a teen center, a computer room, library, and powwow grounds. The center also provides services with a Head Start program (Minnesota Indian Affairs Council-Grand Portage 2010). An elementary school provides education for kindergarten through sixth grade. Young adults in junior and senior high go to school in Grand Marais, the nearest city, around 35 miles to the southwest. The nearest hospital is also in Grand Marais, although a clinic serves the reservation. There is a fire department and ambulance service as well (Ebbot 1985).

The purpose of this chapter is to detail the work that has been done for the Bois Forte and Grand Portage reservations in conjunction with the Indian Land Tenure Foundation (ILTF). We have created GIS products for the reservations, which are at two different stages in their land tenure work. Bois Forte requested land tenure mapping, so maps were created displaying the current land tenure status. Grand Portage has already completed work on land tenure for their reservation. As such, the tribe requested GIS products to be created that will aid in educational efforts to teach band members about their heritage and land history.

Figure 7.2: Grand Portage Reference Map

Grand Portage Reservation

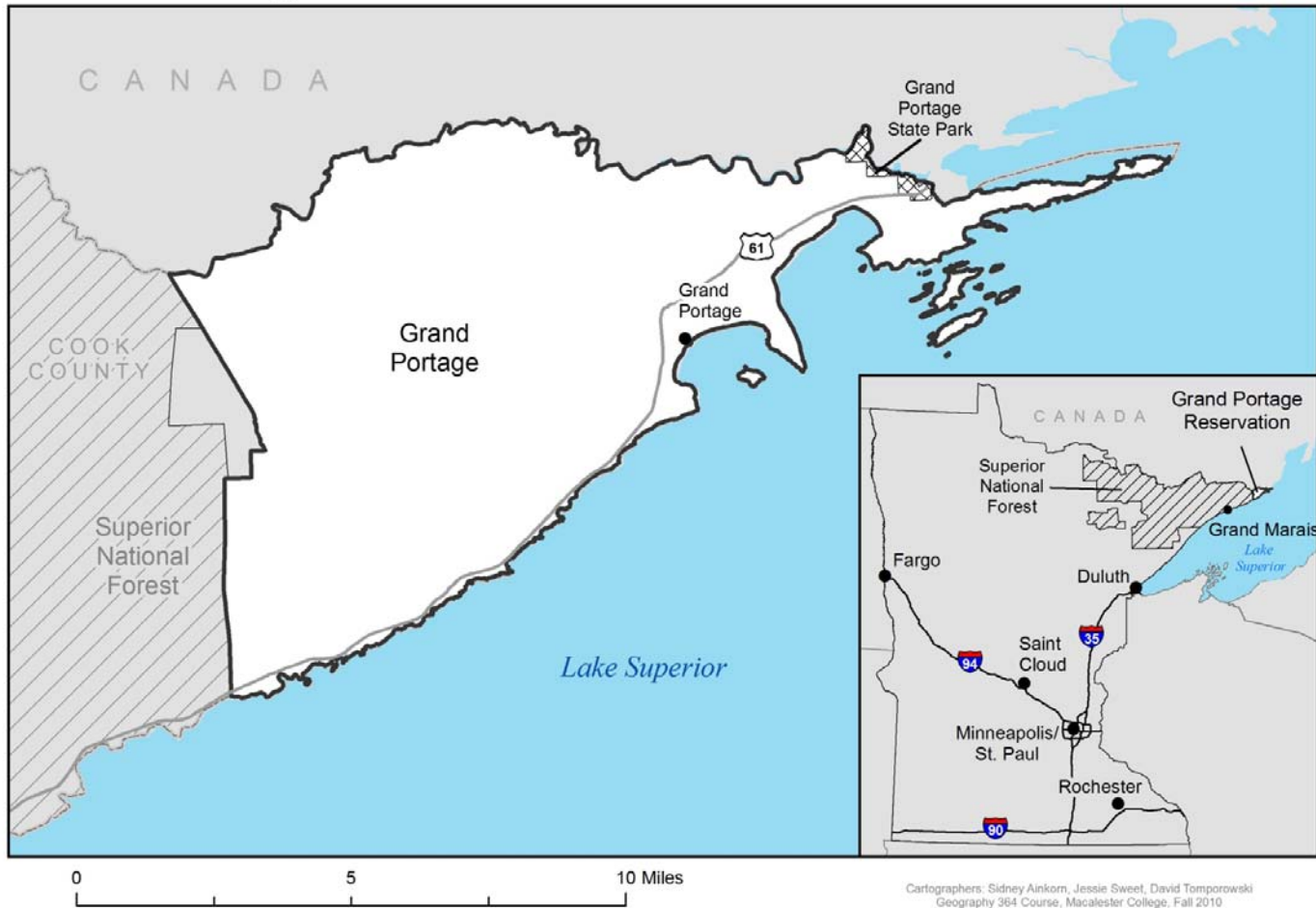
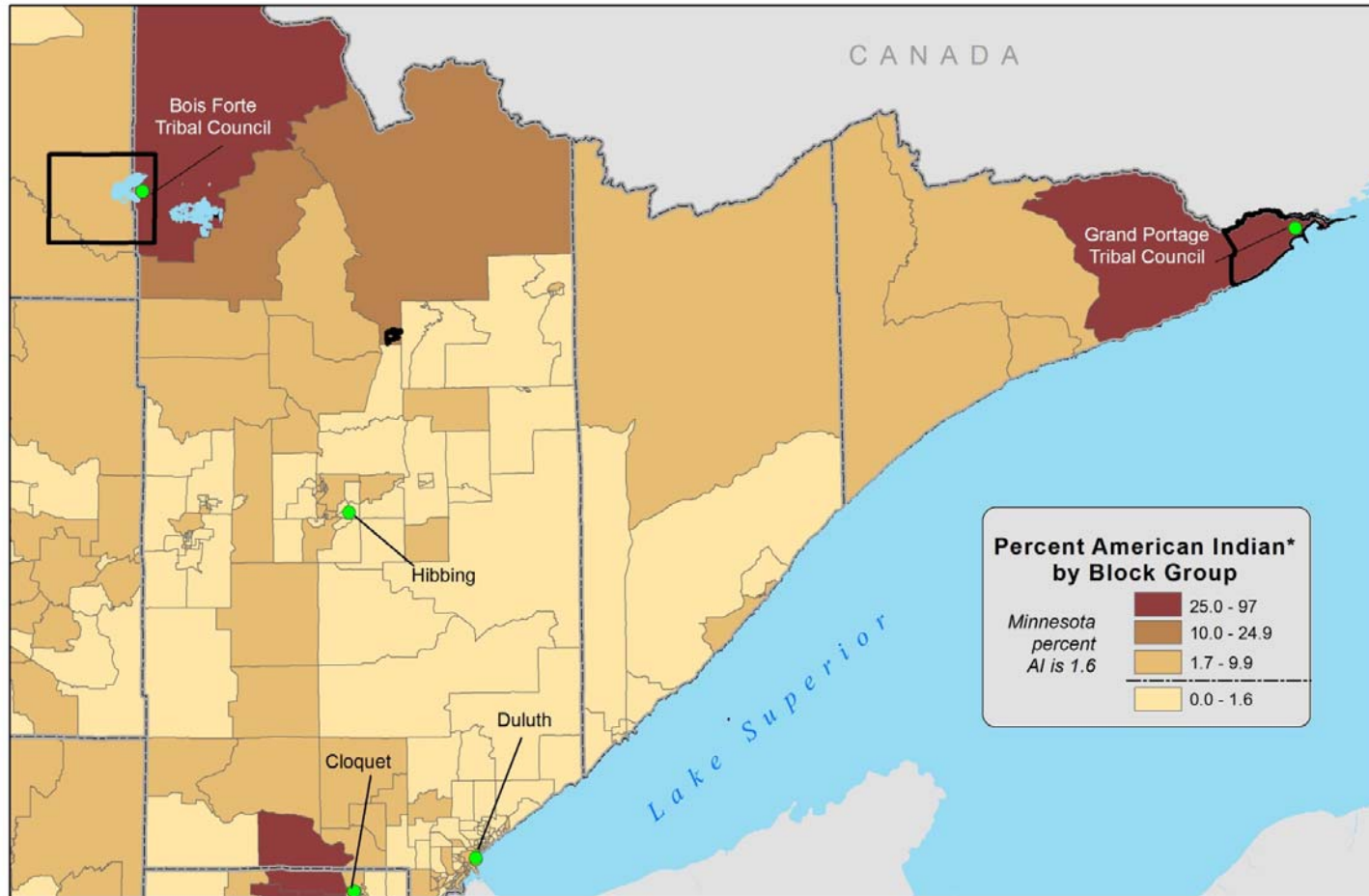


Figure 7.3: Percent American Indian, 2000

Percent American Indian - 2000



Cartographers: Sweet, Ainkom and Tomporowski Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI and US Census 2000, SF1 & SF3*American Indian and Alaska Native alone or in combination with other races.

0 25 50 Miles

Figure 7.4: Percent American Indian, 2006

Percent American Indian – 2006, Estimates

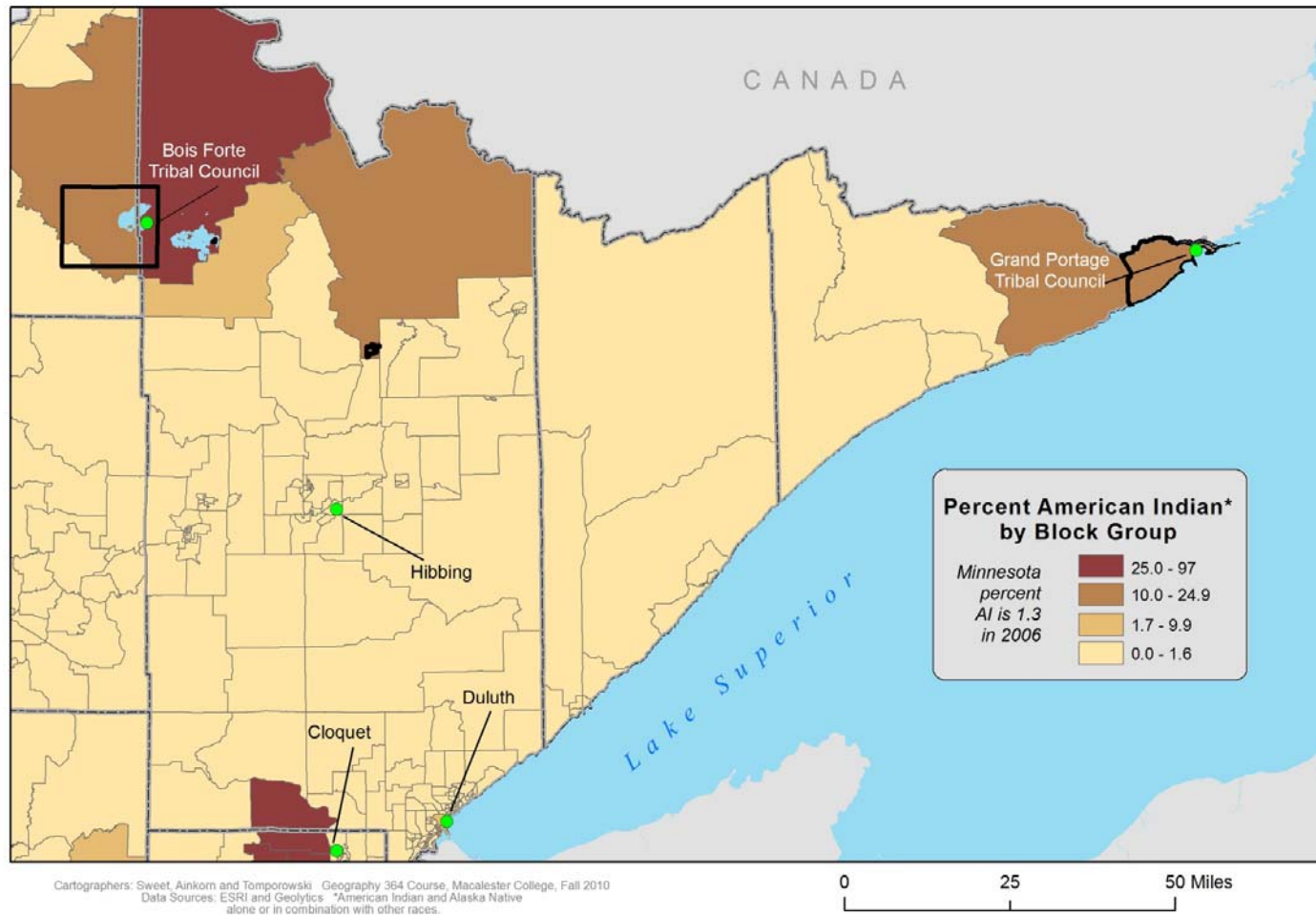


Figure 7.5: Percent American Indian, 2011

Percent American Indian – 2011, Projected

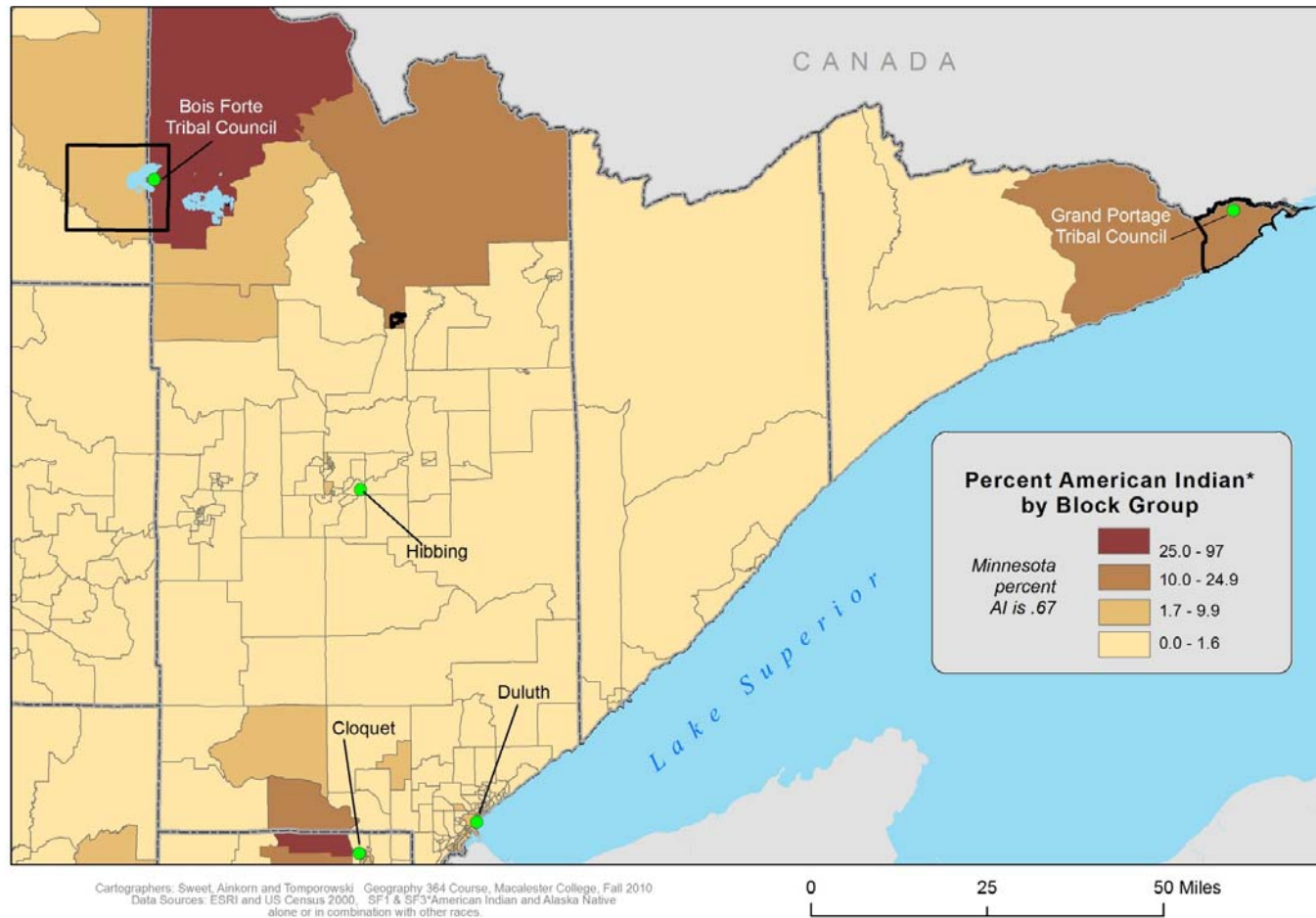
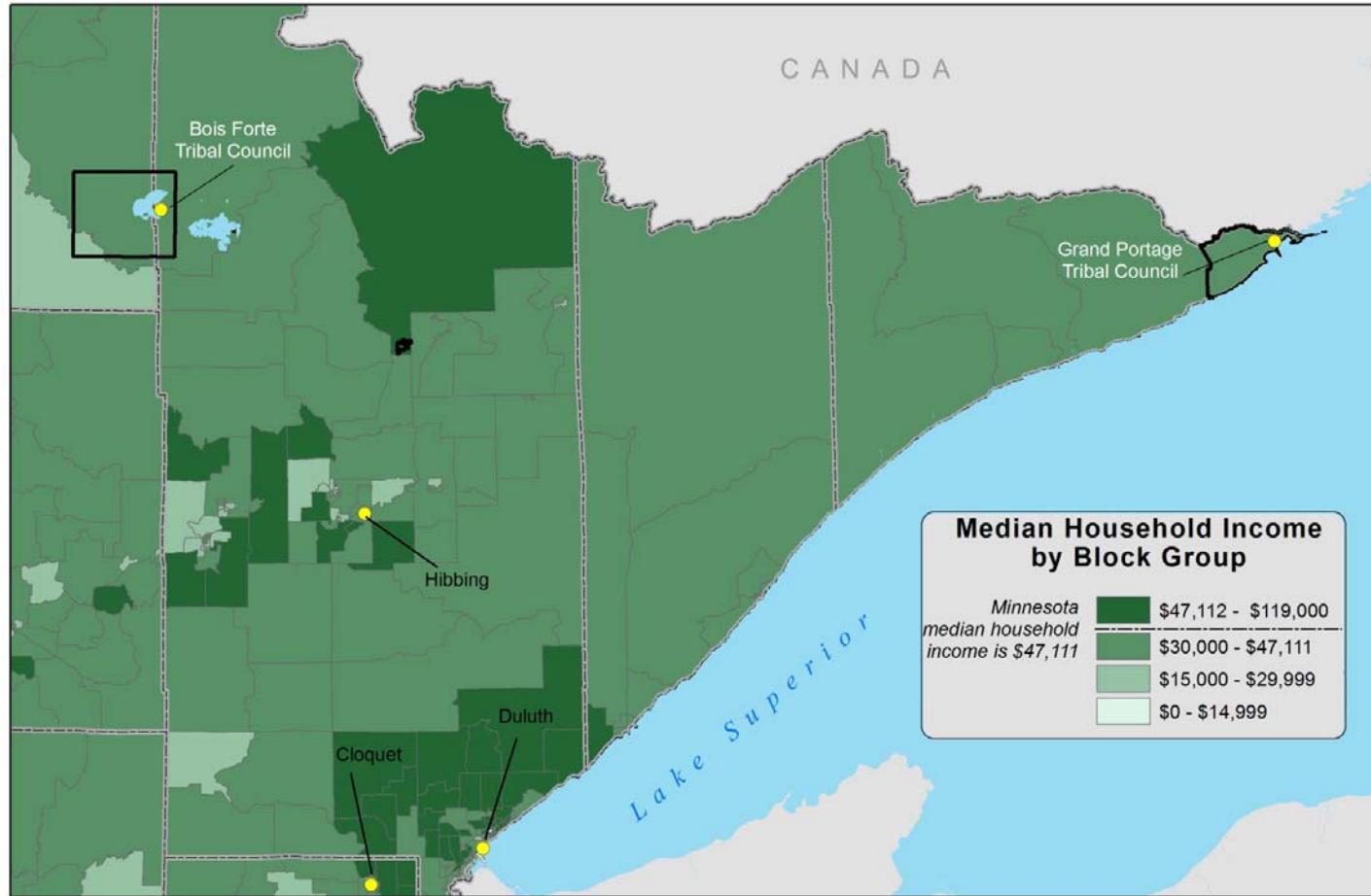


Figure 7.6: Median Income,

Median Household Income - 1999

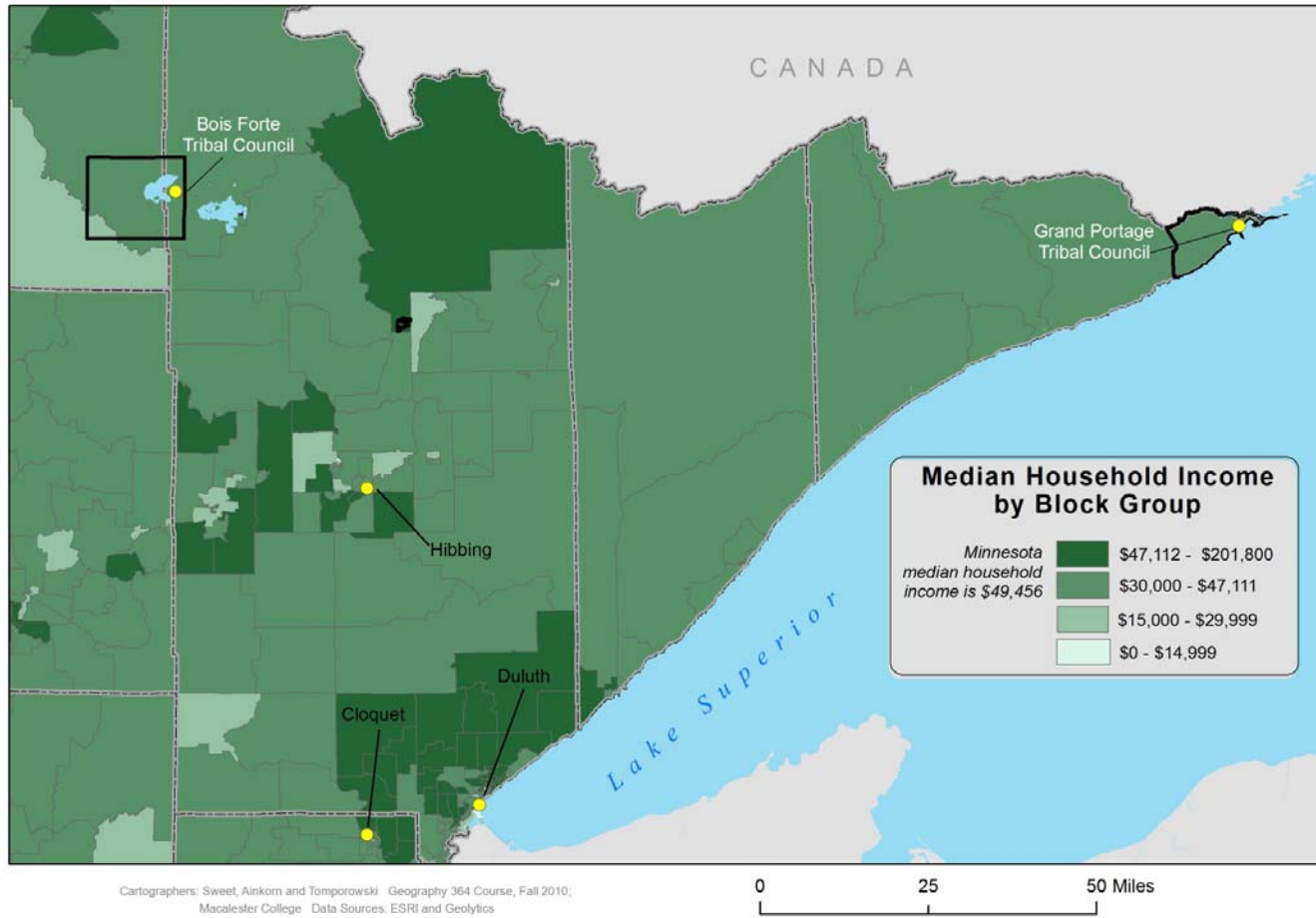


Cartographers: Sweet, Ainkorn and Tomporowski Geography 364 Course, Fall 2010, Macalester College
Data Sources: ESRI and US Census 2000, SF3

0 25 50 Miles

Figure 7.7: Median

Median Household Income – 2006, Estimates

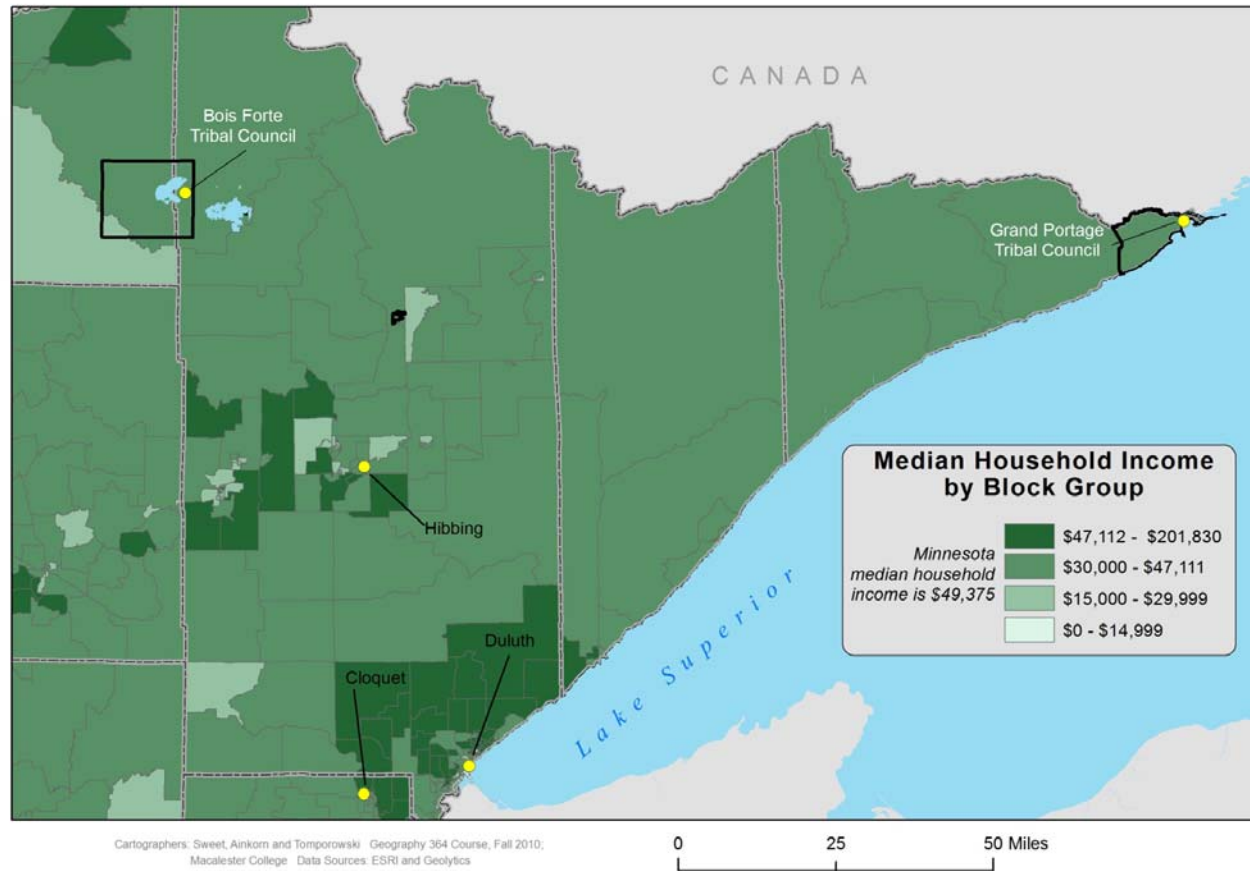


Househol

d Income, 2006

Figure 7.8: Median Household Income,

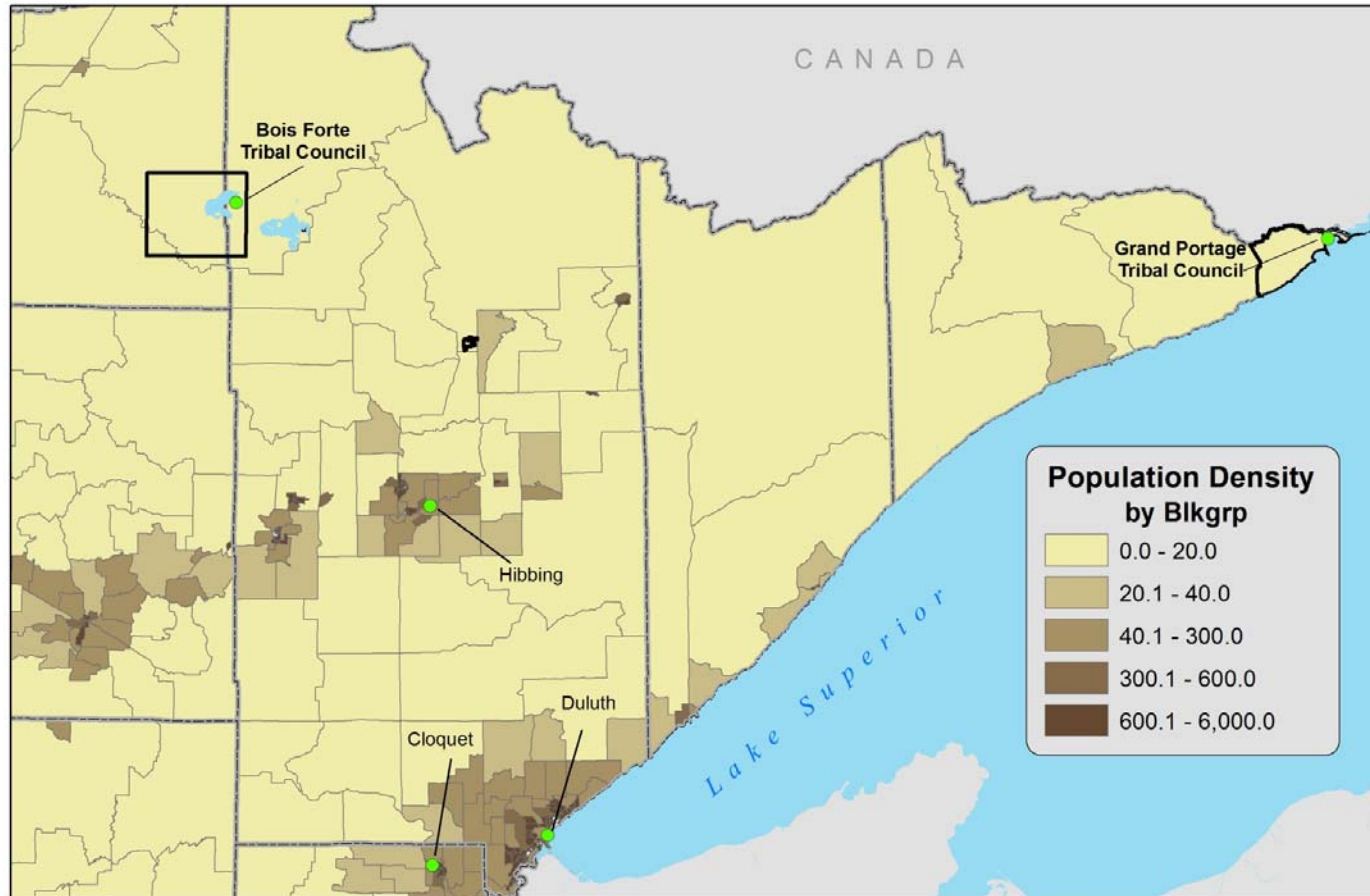
Median Household Income - 2011, Projections



2011

Figure 7.9: Population Density,

Population Density - 2000



Cartographers: Sweet, Ainkorn and Tomporowski Geography 364 Course, Fall 2010;
Macalester College Data Sources: ESRI and 2000 U.S. Census, SF3

0 25 50 Miles

Figure 7.10: Population Density,

Population Density - 2010

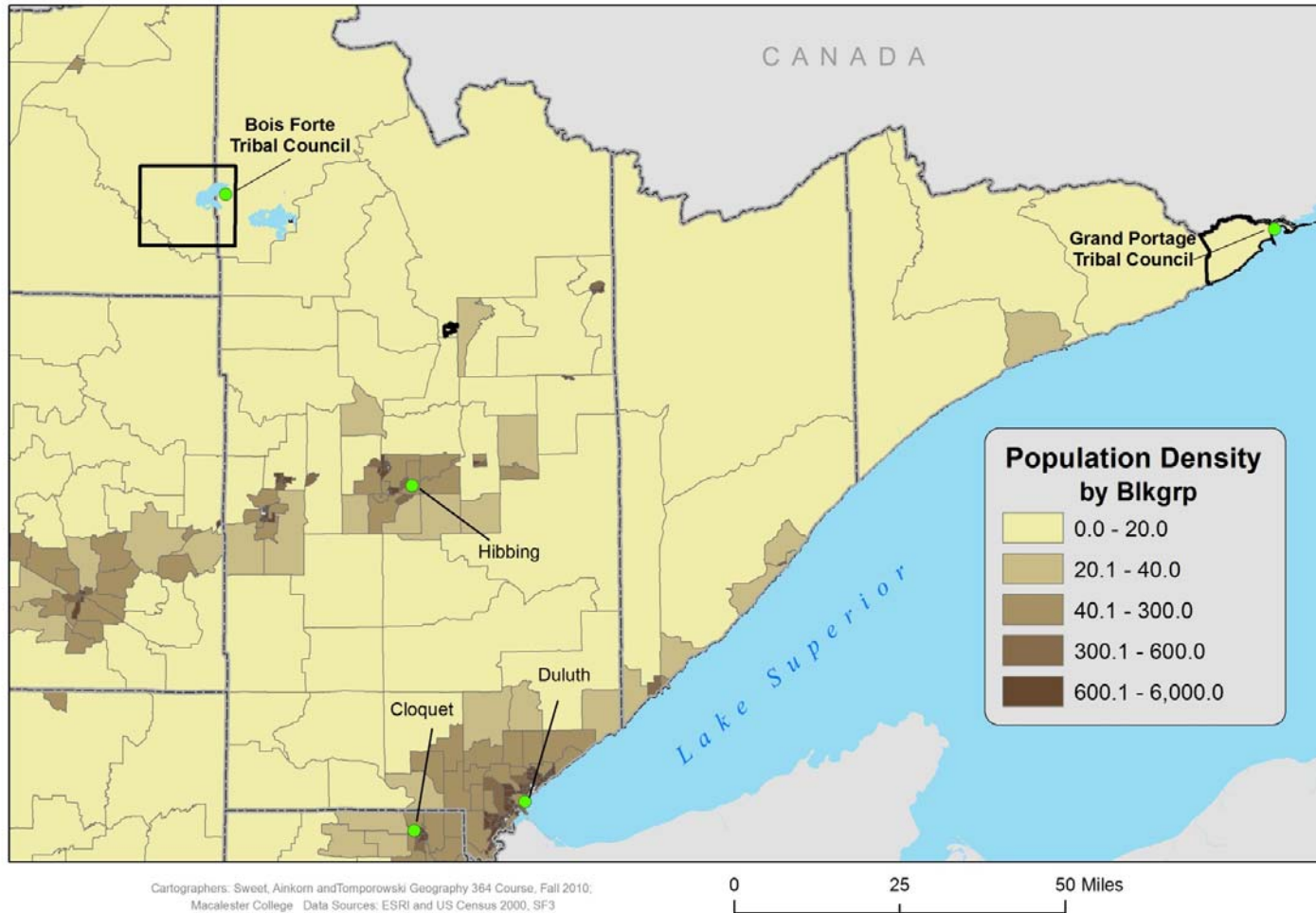
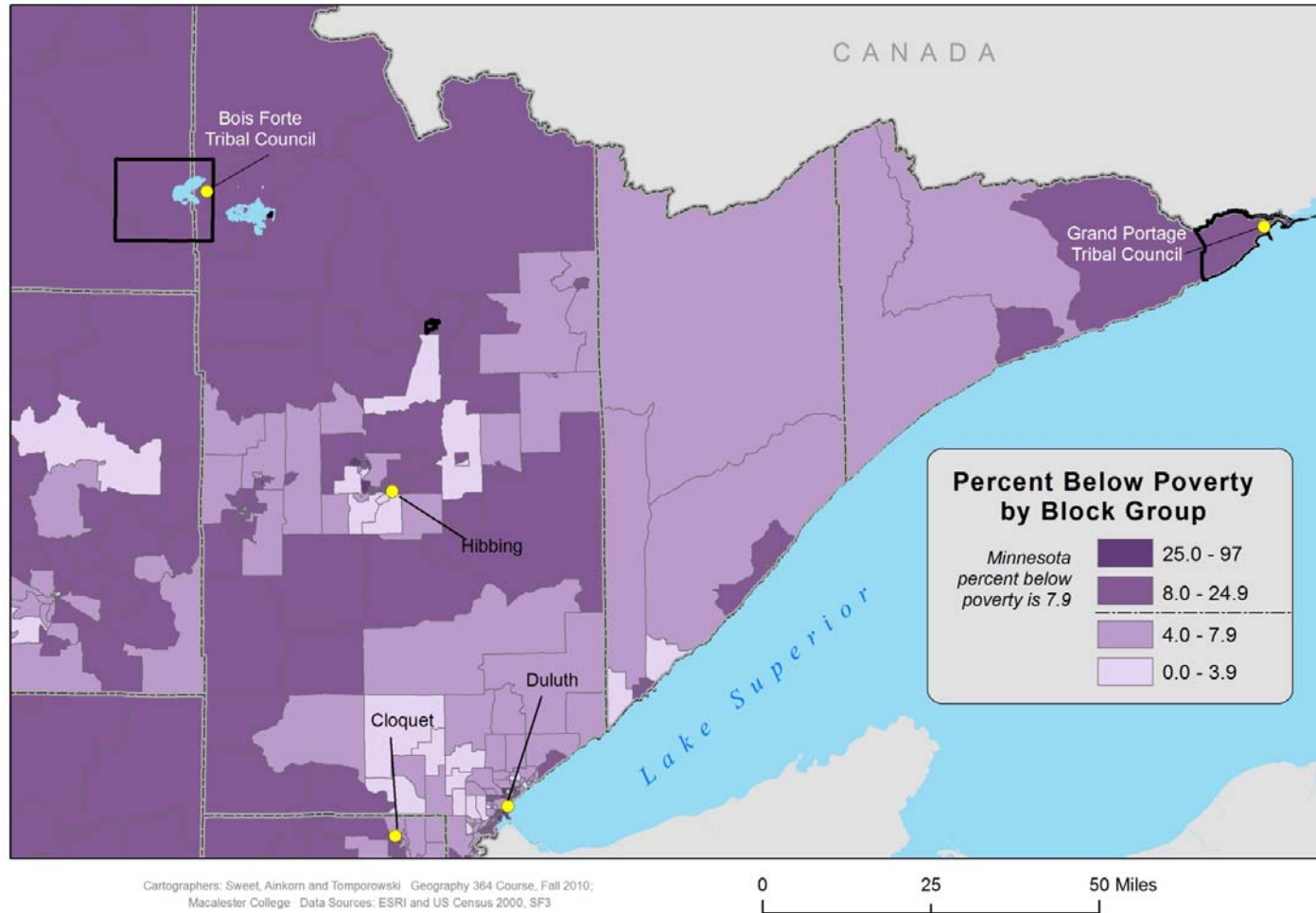


Figure 7.11: Percent Below Poverty,

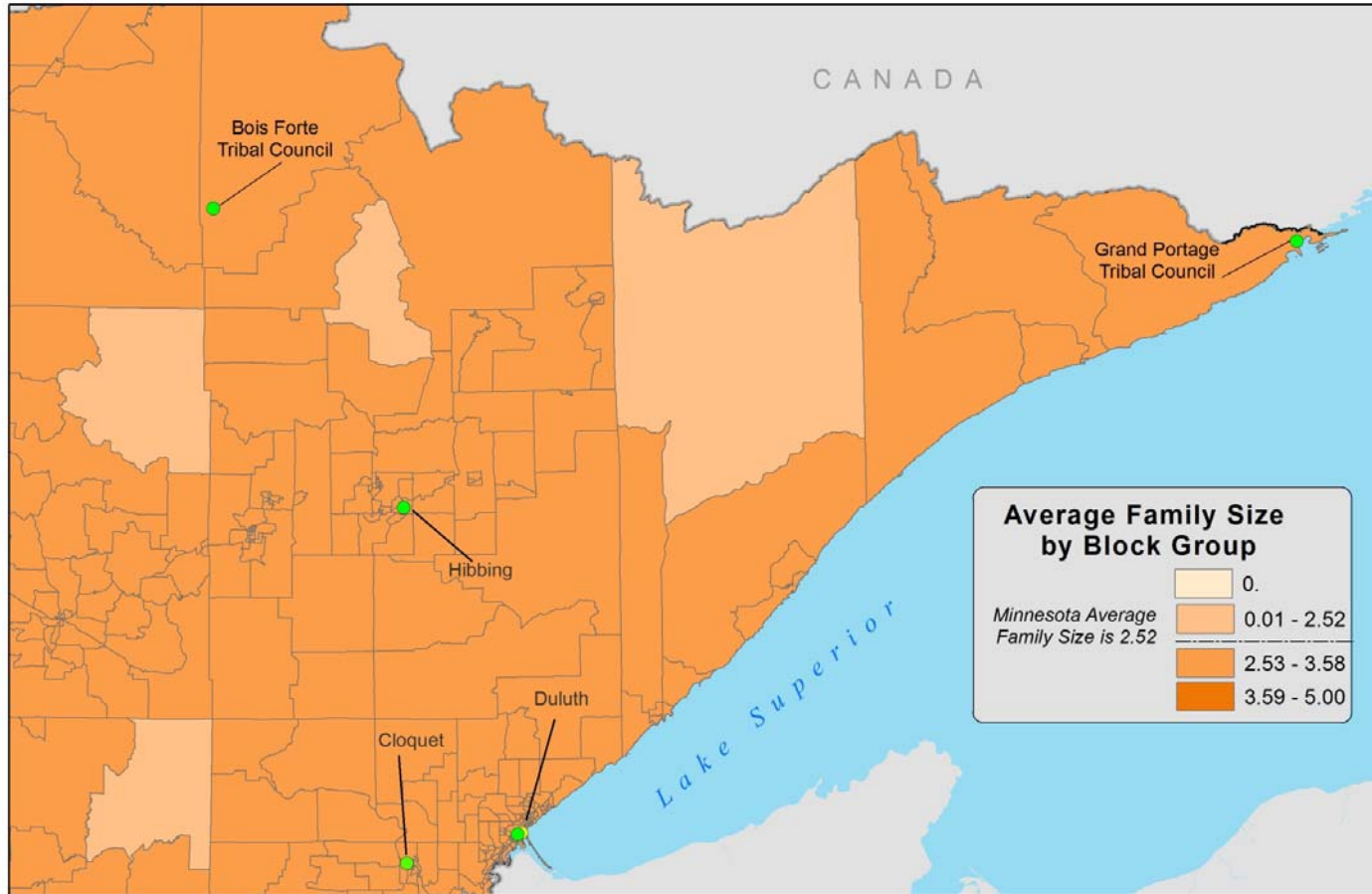
Percent Below Poverty Line - 2000



2000

Figure 7. 12: Average Family Size, 2000

Average Family Size - 2000



Cartographers: Sweet, Ainkorn and Tomporowski Geography 364 Course, Fall 2010;
Macalester College Data Sources: ESRI and US Census 2000, SF3

0 25 50 Miles

BOIS FORTE AND GRAND PORTAGE DEMOGRAPHIC MAPS

The social and demographic maps were created using Geolytics Population Estimates of 2006 and Projections for 2011 data as well as data from the 2000 U.S. Census. Both the Census and Geolytics data are mapped by block group. Because Grand Portage consists of only one block group, we mapped both reservations on a larger scale (specifically the northeast corner of MN, including Cook, Lake, St. Louis, Carlton Koochiching, Itasca and Aitkin counties) because the reservations themselves are comparatively small in population and land area, with Grand Portage consisting of only one block group. In this way, we were able to highlight, compare and contrast the reservations' demographic characteristics with the rest of the counties within the region.

The first demographic feature we evaluated for this project was the percent American Indian population in the region. Figure 7.3 shows the percent American Indian by block group in 2000. That year, the state average of percent Native American was 1.6 percent. The map indicates that all of the reservations in the northeast corner of Minnesota obviously have large Native American populations. (These reservations include Grand Portage in Cook County, Bois Forte in St. Louis, Koochiching and Itasca counties and Fond du Lac in St. Louis and Carlton counties.) Bois Forte appears to have a higher percentage of Native Americans in the northern region of St. Louis County as many members of the Bois Forte Chippewa band congregate near Pelican and Nett Lake. In addition, Vermilion has a high percentage most likely because of job opportunities from the Fortune Bay Casino.

When we compare the percent American Indian population in 2000 (Figure 7.3) to the estimated 2006 percentages (Figure 7.4) we see many changes in the density of American Indians in the areas not proximate to the reservations. The central region of northeastern Minnesota, the northern section of Lake county and the off reservation areas of Cook county all show decreases in the percent American Indian. In 2006, the state average of percent American Indian also decreases, from 1.6 to 1.3 percent. Nonetheless, it is important to note that in 2000 and in 2006, the estimated Native American populations in the Bois Forte and Grand Portage reservations stay relatively the same, fluctuating between 96 percent and 97 percent.

Figure 7.5 shows the projected Percent American Indian population in 2011. The 2011 projections are relatively the same as the estimated 2006 percentages, with some changes in Koochiching County, specifically the western half of the Nett Lake section of the Bois Forte reservation. The percent American Indian population predicted in 2011 decreases in this area. Some band members may move to parts of Vermilion to acquire jobs near Fortune Bay Casino. In addition, it is predicted that the percent American Indian population will increase in areas around Cass and Crow Wing.

The second demographic feature we analyzed was median income. Figure 7.6 shows the median income in 1999 by block group. The average median income for the state was \$47,111. There are parts of the northeastern region of Minnesota that are below the average, including the western and southern parts of the region (excluding areas near Cloquet and Duluth). In the southwestern corner of the Bois Forte reservation, the median

income is below the state average, at \$29,219. In general, both Grand Portage and Bois Forte fall into the category of the state average, or slightly just below it. The most wealthy parts of the region are not only near the major cities of Duluth and Cloquet, but the Vermilion section of Bois Forte where the Fortune Bay Casino is located (at \$47,895).

There is a noticeable difference, however, in the estimated median household income for 2006 (See Figure 7.7). The northeastern corner of Koochiching, above the reservation boundaries of Bois Forte, shows an increase in median income from \$46,477 to \$47,437, though it is still below the state average median income for 2006 (\$49,456). Meanwhile, the area just east of Vermilion shows a decrease in median income at \$29,970. Even though this area falls into a different categorization, the actual decrease in household median income for this section is not that large (The median household income for this area in 1999 was \$30,000). The predicted median household income for 2011 (See Figure 7.8) indicates no dramatic changes from the estimated median household income for 2006, except that the state average median income decreases to \$49,375.

Population density is also a demographic feature evaluated for this project. Figure 7.9 shows the population density of the northeastern region of Minnesota in 2000 while Figure 7.10 shows the data for 2010. It is apparent in both maps that the major cities of Cloquet, Duluth and Hibbing are densely populated as well as the central southern region of Itasca County.

We also analyzed the percentage of the northeastern corner of Minnesota's population who lived below the poverty line by block group in the year 2000, as represented by Figure 7.11. That year, the state average percent below the poverty line was 7.9 percent. The map shows that there is a large percentage of people who live below the poverty line in the Bois Forte reservation (10.9- 16.6 percent) and the Grand Portage reservation (17.5 percent). In contrast, areas outside of the Grand Portage reservation boundaries in Cook County and Lake County, as well as areas around major cities such as Duluth, Cloquet and Hibbing have lower percentages of people living below the poverty line.

Lastly, we created figure 7.12 to show the average family size of the population in 2000 by block group. That year, the state average family size was 2.52. It is apparent that Grand Portage (2.59-2.96) and Bois Forte (2.81) have significantly higher average family sizes while the northern section of Lake County, the area just west of Vermilion and the northeastern corners of Itasca and Aitkin have lower average family sizes.

BOIS FORTE LAND TENURE

The Nett Lake portion of the Bois Forte reservation is split between Koochiching and St. Louis counties with the larger western portion falling in Koochiching, and the remainder of the area falling in St. Louis. In compiling the land tenure information for Nett Lake, the Koochiching County data were derived from a county database and were current to the time it was provided (Fall 2010) while the St. Louis data were derived from the county plat book published in 2002.

The land tenure map (See Map 7.13) for Nett Lake section of Bois Forte shows roughly one-third of the land within Nett Lake to be in trust (Red), with another one-third owned by private corporations (Pink), such as the timber companies Meriwether and Potlatch. Summary statistics of the area confirm these visual conclusions. Trust land comprises 36.4 percent of the acreage within Nett Lake, while private corporations hold 39.5 percent of the land. Tax forfeiture (Orange) accounts for another 20.7 percent. The few remaining acres can be attributed to private ownership (1.8 percent) and unknown status (1.5 percent).

The trust land is concentrated in the eastern half of Nett Lake, encompassing the lake itself and the Village of Nett Lake. The western half of Nett Lake is dominated by tax-forfeited parcels (administered by both county and state), while corporation-owned land can be found throughout Nett Lake anywhere outside of the lakefront land and the village. There are also two small areas of off-reservation trust land (not pictured) in St. Louis County, on the shores of Pelican Lake, known as Indian Point and Sugar Bush. While not part of the reservation, these two small areas are entirely in trust, and are under Band control.

Vermilion has a different land tenure situation than Nett Lake. The Vermilion section is much smaller, and all of the land inside the reservation boundary is in trust. Vermilion also has parcels adjacent to the reservation that are in trust as well, which almost doubles the size of the total trust area. Four adjacent parcels are classified as American Indian Fee Land, because they are held by Bois Forte LSC. Because all this nearby land is also under the Band's control, the land tenure map for Vermilion extends beyond the reservation boundaries to show the full extent of Bois Forte-controlled land. Vermilion, however, does not cover all of the land on the peninsula where it is situated, and there is private individual ownership and tax-forfeited land mixed in with the Band-owned fee land as well.

Figure 7.13: Bois Forte Land Tenure : Nett Lake

Bois Forte Land Tenure: Nett Lake

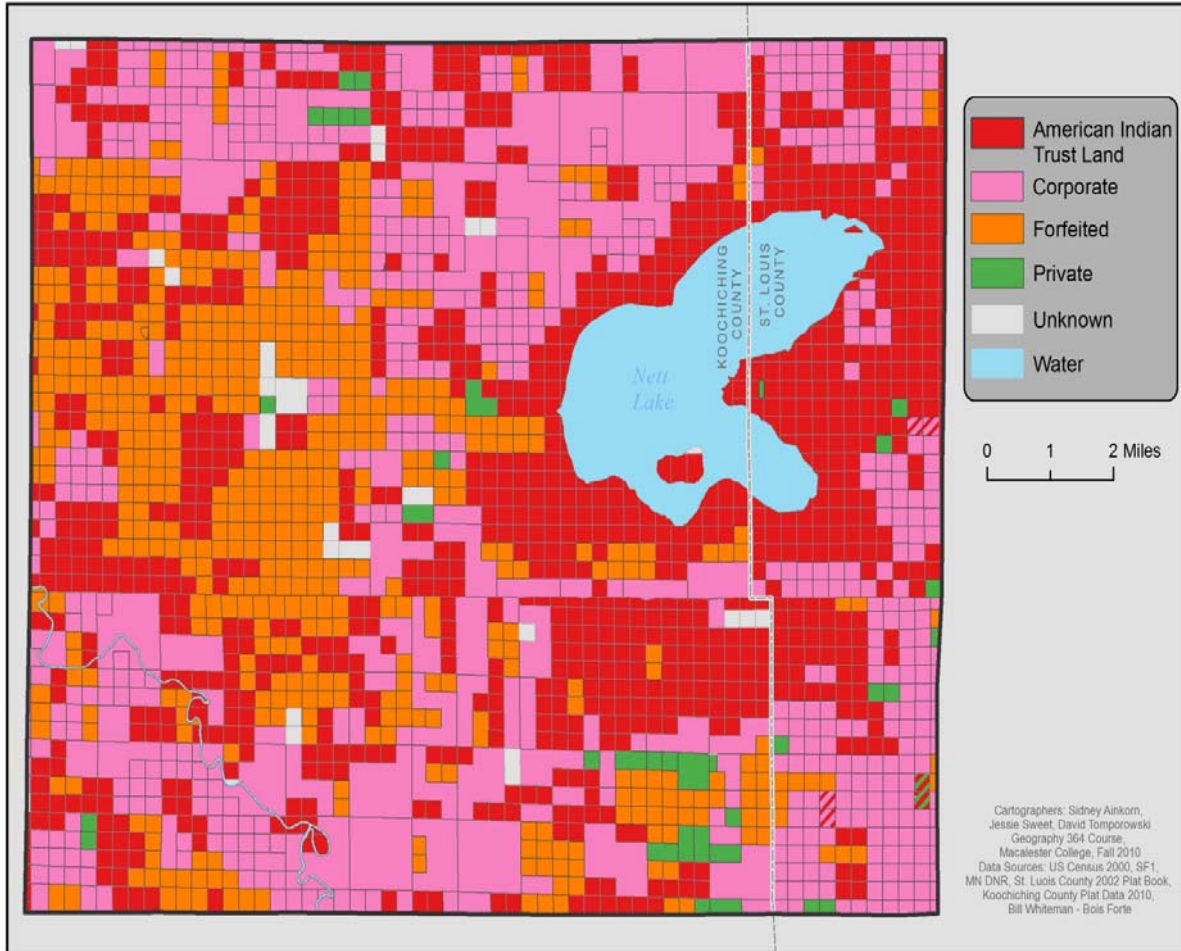


Figure 7.14: Bois Forte Land Tenure : Nett Lake

Bois Forte Land Tenure: Nett Lake

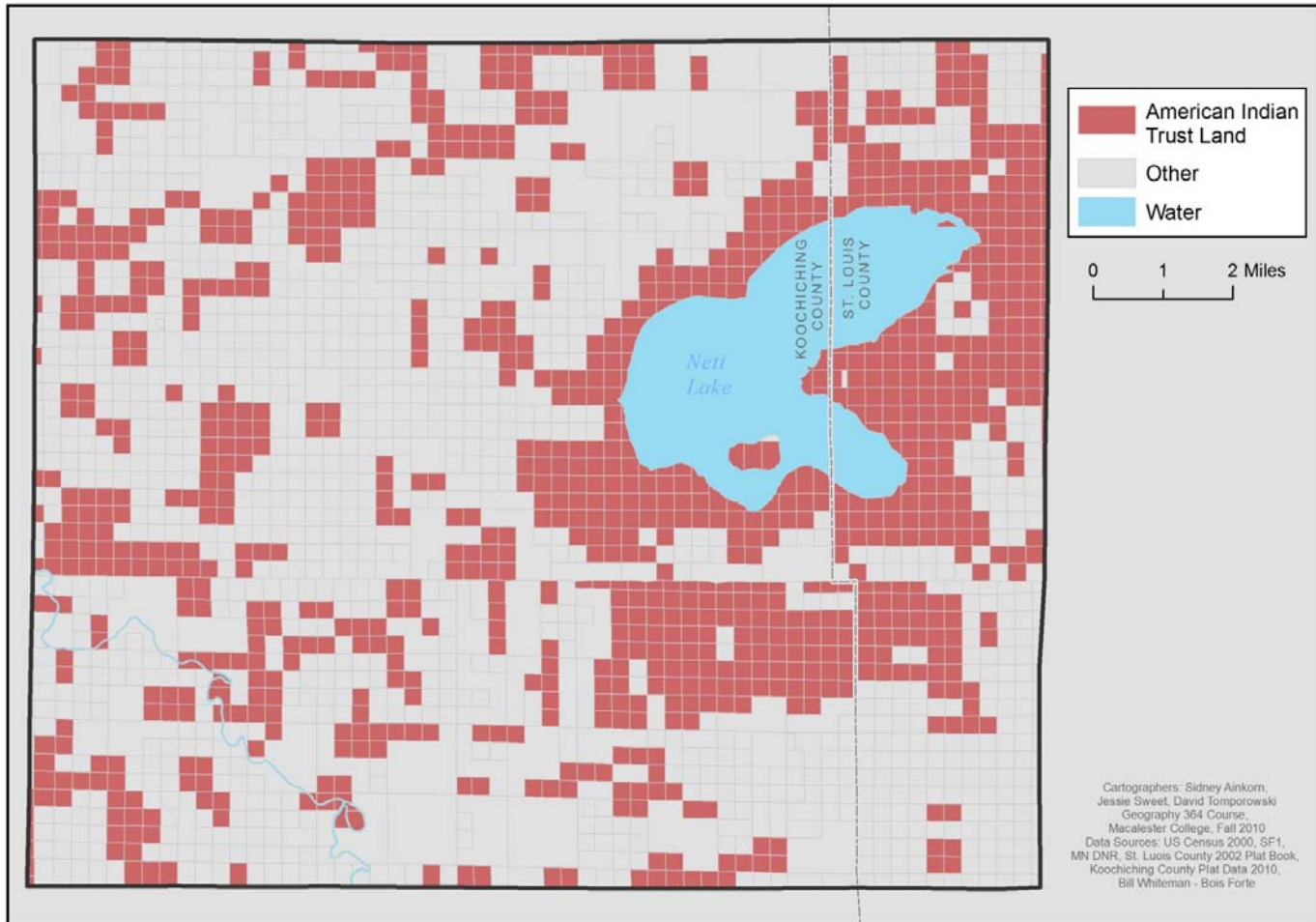
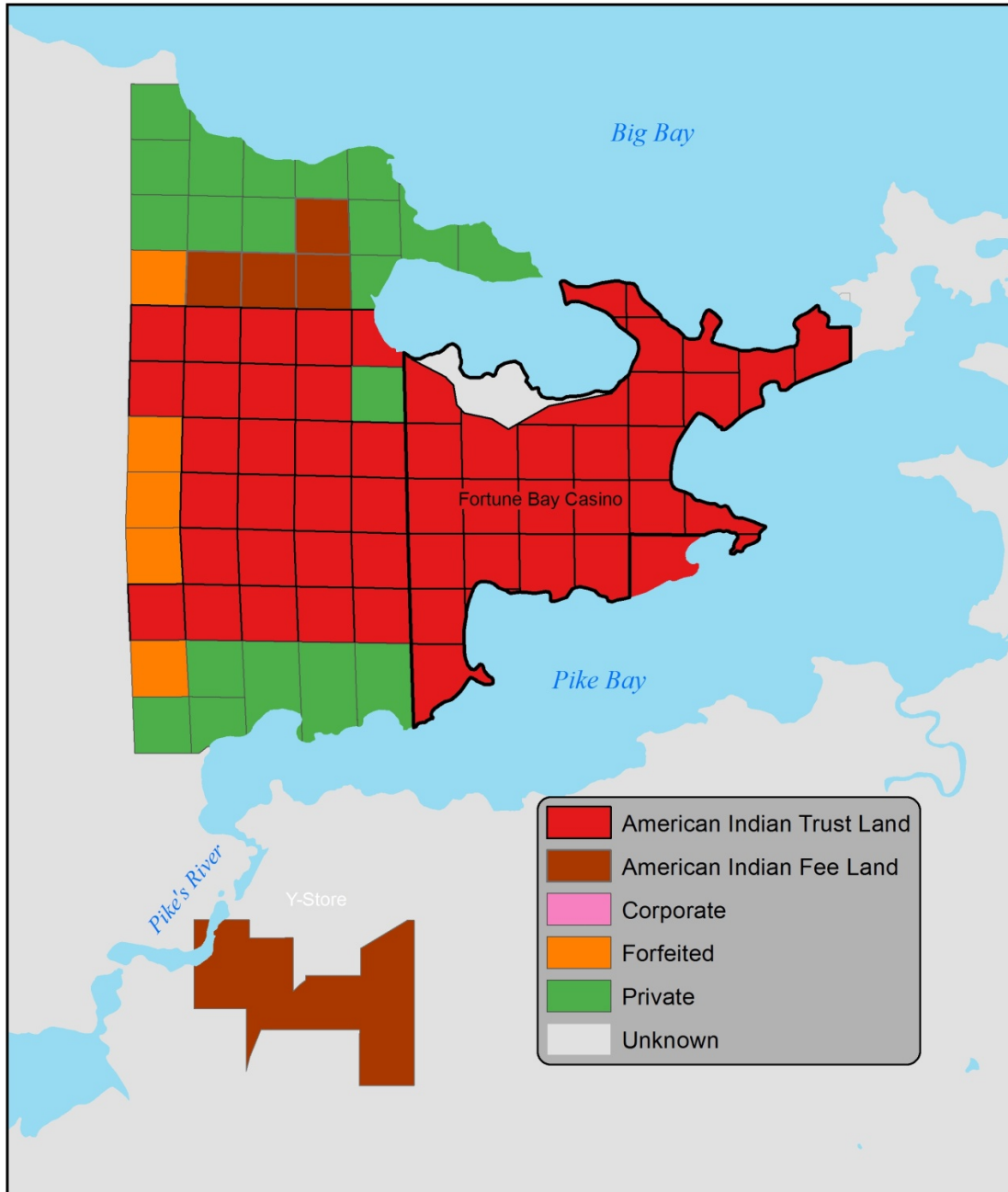


Figure 7.15 : Bois Forte Land Tenure :
Vermilion

Bois Forte Land Tenure: Vermilion



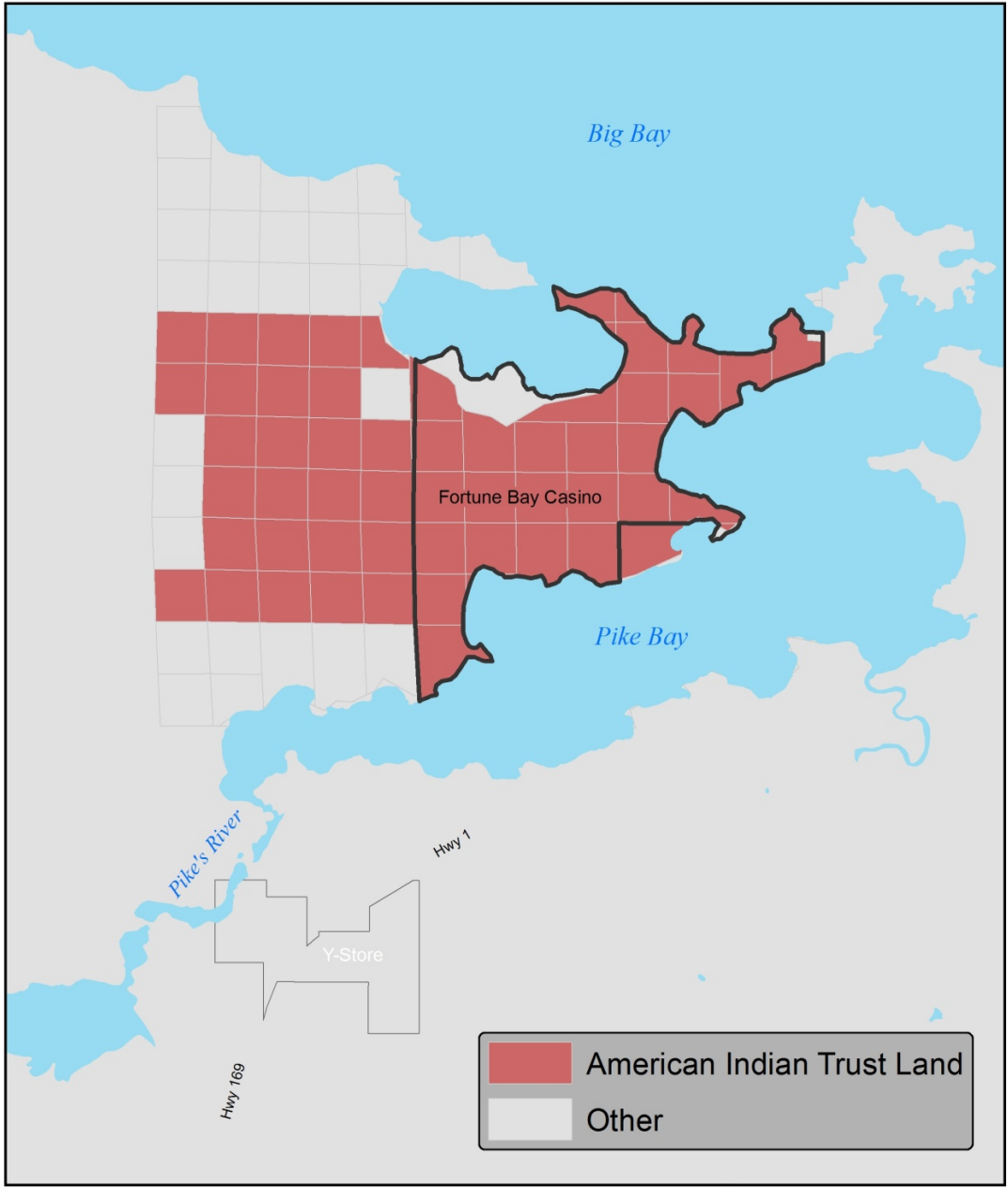
Cartographers: Sidney Ainkorn, Jessie Sweet, David Tomporowski
Geography 364 Course, Macalester College, Fall 2010
Data Sources: US Census 2000, SF1, MN DNR,

St. Louis County 2002 Plat Book, Koochiching County Plat Data 2010, Bill Whiteman - Bois Forte

0 0.5 1 Miles

Figure 7.16: Bois Forte Land Tenure : Vermilion

Bois Forte Land Tenure: Vermilion



Cartographers: Sidney Ainkorn, Jessie Sweet, David Tomporowski
Geography 364 Course, Macalester College, Fall 2010
Data Sources: US Census 2000, SF1, MN DNR,
St. Louis County 2002 Plat Book, Koochiching County Plat Data 2010, Bill Whiteman - Bois Forte

0 0.5 1 Miles

GRAND PORTAGE

TRYGG MAP

This map (See Figure 7.17) shows cultural features that were digitized from the Trygg map made of the Grand Portage reservation. The Trygg map was created in 1966 by J. William Trygg as a result of his employment as an appraiser for several Indian Tribes in their suits against the United States for adjustments of the amounts paid to them by the government for their ceded lands (Trygg Land Office, 2009). The Trygg map is based off of the original land surveys of the area conducted between 1859 and 1894. To make Figure 7.17, the Trygg map was georeferenced to the PLSS (township, range, and section lines). Then human-made features, such as buildings, along with significant cultural features were digitized. Environmental features such as mountains, water bodies, and sugar bushes were not digitized.

ORIGINAL SURVEY MAPS

This map (See Figure 7.18) shows cultural features as they appear on the original land survey maps of the Grand Portage region created between 1859 and 1894. In order to make this map, each original survey map that covers a portion of the reservation (Townships 62-64, Ranges 5-7 and part of 4) was georeferenced to the PLSS (township, range, and section lines). Trails, boundaries, and buildings were digitized. Environmental features such as mountains and water bodies were not digitized.

SUMMARY

According to our partners at Grand Portage, these digitized historical features will serve an important educational role in Grand Portage. The Band is beginning an educational program in the area's schools that will show all this cultural information (trails, buildings, etc.) on maps to help young people learn about their heritage.

Further, a concern of the Band has always been that historical maps of the area often reflect European uses of the land. Having these digitized historical features will help the Band create their own map of their names, uses, and stories of the landscape. Finally, being able to locate these features on a map will allow Band members to locate these sites and protect and preserve them as important parts of Grand Portage's heritage.

Figure 7.17: Historical Features

Historical Cultural Features from Trygg Map

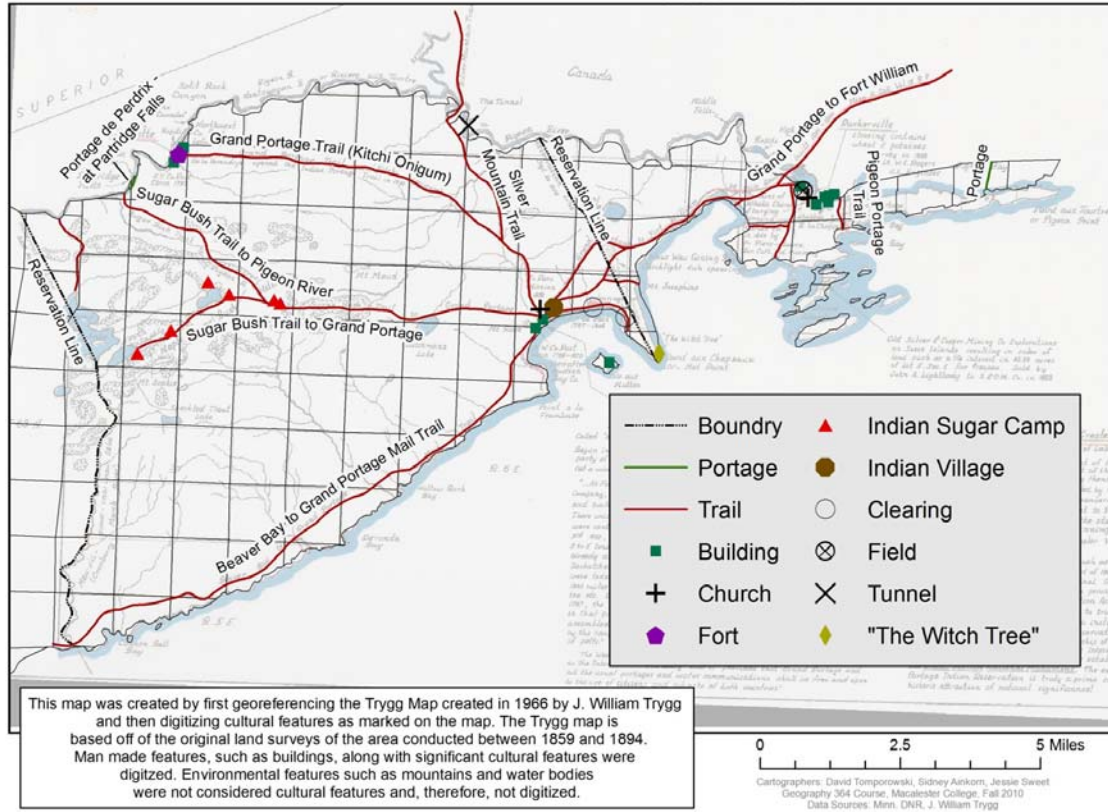
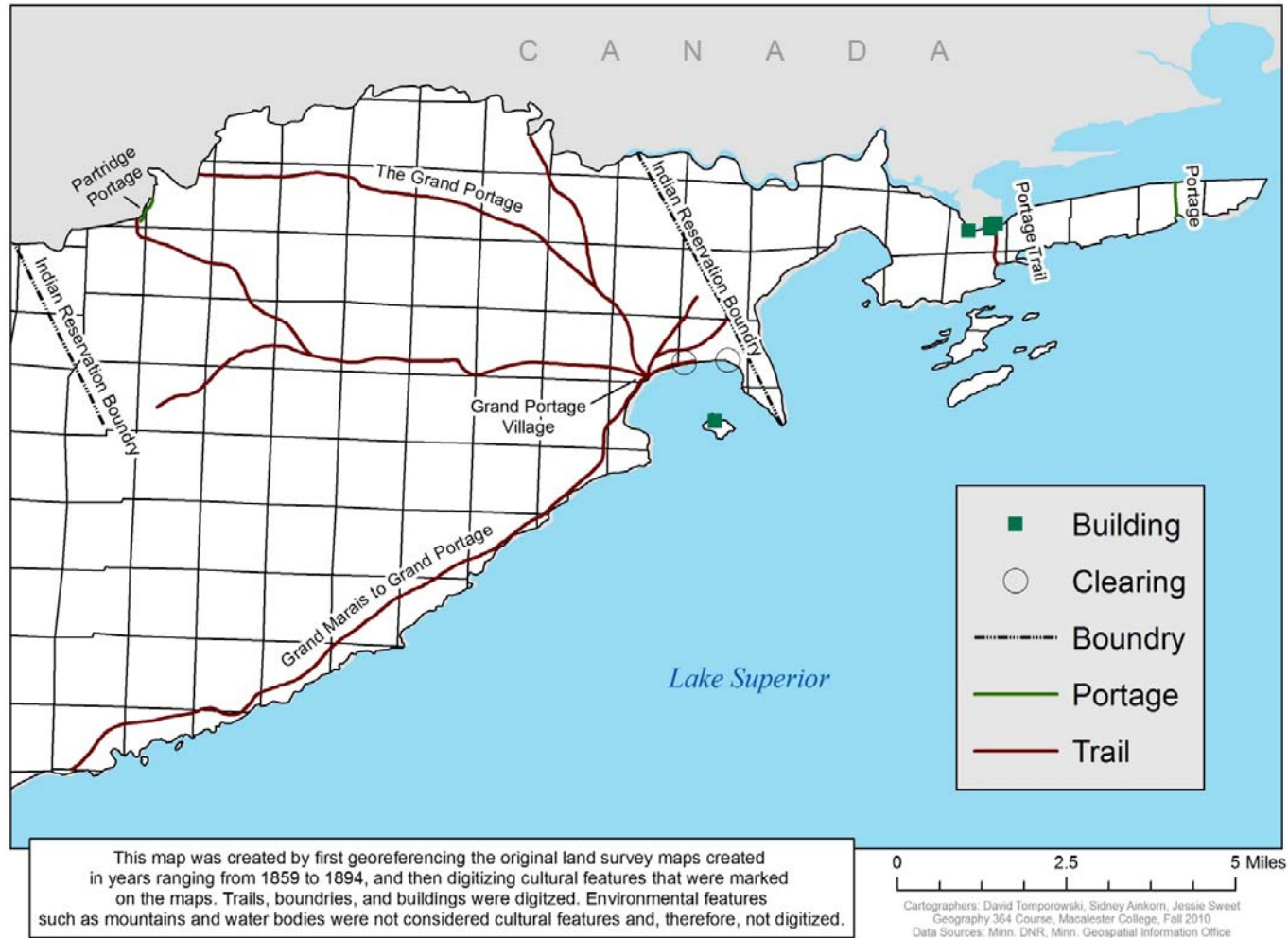


Figure 7.18: Historic Cultural

Historic Cultural Features from Original Survey Maps



Features

CONCLUSION

BOIS FORTE

The land tenure situation in Bois Forte is representative of the checkerboarding affecting Indian land tenure across the nation. The Nett Lake section of the reservation is split three ways between the Band, private corporations, and tax-forfeiture. The limited extent of Band-controlled land is in itself troubling, but the way that the different types of ownership are dispersed also complicates matters. While areas may appear to have overall cohesion, often one township section will have parcels of two or three different designations.

However, one of the largest contiguous areas within the reservation is the unbroken trust land that surrounds the lake. This area and the lake are important for the wild rice crop. The non-contiguous portions of the reservation, Indian Point, Sugar Bush, and Vermilion, are entirely in trust, and Band control extends beyond Vermilion's boundary, as the Band owns adjacent parcels of land in that area. Bois Forte land tenure is plagued by the same problems of reservations throughout the U.S. but there are positive trends present that can be built on in the future.

GRAND PORTAGE

The dynamic and complicated history of land tenure for the Grand Portage band is indicative of the need to "gain ownership of the history of [the] land" (LTF et al. 2006). By digitizing cultural features as displayed on two different sets of maps depicting the reservation at two different time periods, the resulting GIS files will be educational tools for learning about each member's heritage. Further, being able to locate these historical features will enable the Band to find, protect, and preserve these features for generations to come. This cultural information will hopefully be helpful to Grand Portage Band members gain ownership of the history of their land.

8

FOND DU LAC RESERVATION

INTRODUCTION

BACKGROUND

The Fond du Lac (FDL) reservation was established by the 1854 LaPointe Treaty with the Mississippi and Lake Superior bands of the Chippewa (FDLA 2010, Anishinaabeg History). The reservation is located 15 miles west of Duluth, directly adjacent to the city of Cloquet, and in St. Louis and Carlton counties. In 2007 there were 1,353 members living on the reservation and 3,965 total enrolled members (Bewer 2007, 111). The Tribe runs the Fond du Luth Casino in downtown Duluth, the only casino in Minnesota that was built off of reservation land. The tribe also runs the Black Bear Casino at the junction of Highway 210 and Interstate 35 are the two casinos run by the reservation. The Tribe also has a number of important educational services including a tribal Head Start program, a K-12 school and a Community College. The Tribe has many governmental bodies and programs including a Resource Management Division and health services on the reservation in Duluth (Indian Affairs Council 2010).

HISTORY OF LAND TENURE

The reservation is mostly comprised of Lake Superior band members and, when established, comprised 101,426 acres (Fond du Lac Resource Management 2008, 11). When defining the boundary of their reservation the tribe realized that the southern boundary was three miles north of Perch Lake, the principal settlement area of the Band. The boundaries were reestablished through Executive Order to include this important lake (Peacock 1998, 48). On 4 March 1890, through the Nelson Act, members of FDL were allowed to select a parcel from their reservation and all non allotted lands were classified as “pine or agricultural” and sold (Peacock 1998, 50). These parcels were usually 40-60 acres (ILTF, History of Allotment 2009). Most of these lands were initially held in trust. In 1906 with the passage of the Burke Act, allottees identified as “competent” were able to have their land transferred to fee, opening the land to all applicable taxes. This act also released the land from any restrictions of sale.

Currently, 70.3 percent of the reservation is owned by the state, county, and private parties. The rest of the reservation is either held in trust by the tribe, band, or individuals, or in fee simple by Indian individuals (Fond du Lac Resource Management 11 2008). Our

goal is to document with the following maps the historical change of land status on the reservation and to understand the historical and temporal patterns of allotted lands, trust lands, and fee patent lands.

METHODS

The core maps in this chapter were developed in order to provide background information about the reservation, while historical maps are the result of our partnership with the ILTF and the Fond du Lac Reservation. We were contacted by Tim Krohn, the GIS specialist at Fond du Lac. He said that he would like our help in examining historical land tenure data. These data came in the form of a “Land Index,” or ownership records, held by the Bureau of Indian Affairs.

The paper records contained information about the name and race of the land owner/trustee, identifying numbers, where their land was located, and the date the land was transferred to them or if their tenure status was changed. Although data for a variety of tenure types were provided, Mr. Krohn asked us to concentrate on allotment, trust, and fee simple lands, as these were the most pertinent to major legislation and history. The other major tenure type was probate, which could be used for future research regarding issues of fractionation. Due to time constraints, we were able to compile the data for two townships into a GIS using a spreadsheet format.

Through the data entry process, we noticed tenure changes clustered around certain dates. We decided to map these dates to see if there was any pattern as to which lands changed status and the time frame in which they changed. We also noticed changes in tenure status over time for the same owners and same pieces of land. We decided to map the land tenure changes, from the very first allotment, all the way through the present in order to see the different phases, and subsequent losses, in Indian land tenure. We were able to use a GIS to calculate summary statistics based on acreage, parcel counts, and year, in order to aid us in our analysis.

These data and the format utilized do have some limitations. We were not able to show ownership of parcels that are less than 40 acres and were not able to show parcels that had multiple owners under the same tenure status. Furthermore, parcels are not well defined around natural features such as lakes. Some of these limitations can be overcome through further geoprocessing. Finally, as the data was input by hand, it is subject to human error.

The remainder of this chapter is organized into three additional sections. The first section provides a background and overview of demographic and locational attributes of the reservation. Section two concentrates on maps depicting changes in land status over time, dating from 1884 to the present. Section three offers concluding remarks.

MAPS

REFERENCE MAP

Figure 8.1 shows the reservation today. The reservation is 154 sq. miles (FDL A 2010) and includes part of a state forest, several tribal businesses, wild rice lakes, several tribal facilities and a casino. The city of Cloquet lies just outside the reservation's eastern boundary. The majority of the reservation is rural land. One in six of the reservation inhabitants are members of the Minnesota Chippewa Tribe (FDL A 2010).

AMERICAN INDIAN TRUST LAND

Figure 8.2 shows trust land on the reservation today. Currently, the tribe reports 25,210 out of 83,366 total reservation acres designated as trust land (30.2 percent). As Map 2.2 shows, there is no explicit spatial clustering of trust lands in general, but most the areas around Perch Lake and Big Lake are in trust for the tribe, band or heirs. There are also lands held in trust within the Fond du Lac State Forest. The majority of the land is held in trust for the tribe or the band, and very few lands are held in trust for individual heirs.

POPULATION DENSITY- 2000

Figure 8.3 shows the population density of Fond du Lac and the surrounding areas. The Fond du Lac Reservation has a very low population density, with fewer than 46 people per square mile. The low population density indicates a rural landscape within the reservation. Areas to the north, west and south are also rural. However, the reservation is adjacent to the higher density town of Cloquet, and is approximately 20 miles from the city of Duluth—the largest urban center in northern Minnesota.

MEDIAN HOUSEHOLD INCOME- 1999

Figure 8.4 depicts the median household income of Fond du Lac and the surrounding areas by block group. For Minnesota, the median income is \$47,111. All block groups within the reservation are below the state's median, with the southwestern corner having the lowest median income of \$29,375. The other three block groups in the reservation have a medium income between \$37,321 and \$44,250. In the surrounding region lower incomes are concentrated in the cities of Duluth and Cloquet and on the reservation. Higher incomes are found in the areas surrounding the cities and in the more rural areas around the lakes.

FOND DU LAC PERCENT AMERICAN INDIAN- 2000

Figure 8.4 shows that the Fond du Lac reservation has the highest concentration of American Indians in St. Louis and Carlton counties. The surrounding areas have rather small American Indian populations, with the exception of Duluth. In Duluth there are seven block groups with a population of over 10 percent American Indian.

Fond du Lac: Percent Below Poverty - 2000

Figure 8.5 shows the percentage of residents living below the poverty level within each block group. Fond du Lac has between 8 and 25 percent of residents living in poverty, which is slightly above the state average of 7.9 percent. The nearby towns of Duluth and Cloquet however, also have above average levels of poverty. The same block groups that have the highest level of poverty also have some of the highest concentration of American Indians living outside of the reservation.

Figure 8.1: Fond du Lac Reservation Base Map

Fond du Lac Reservation

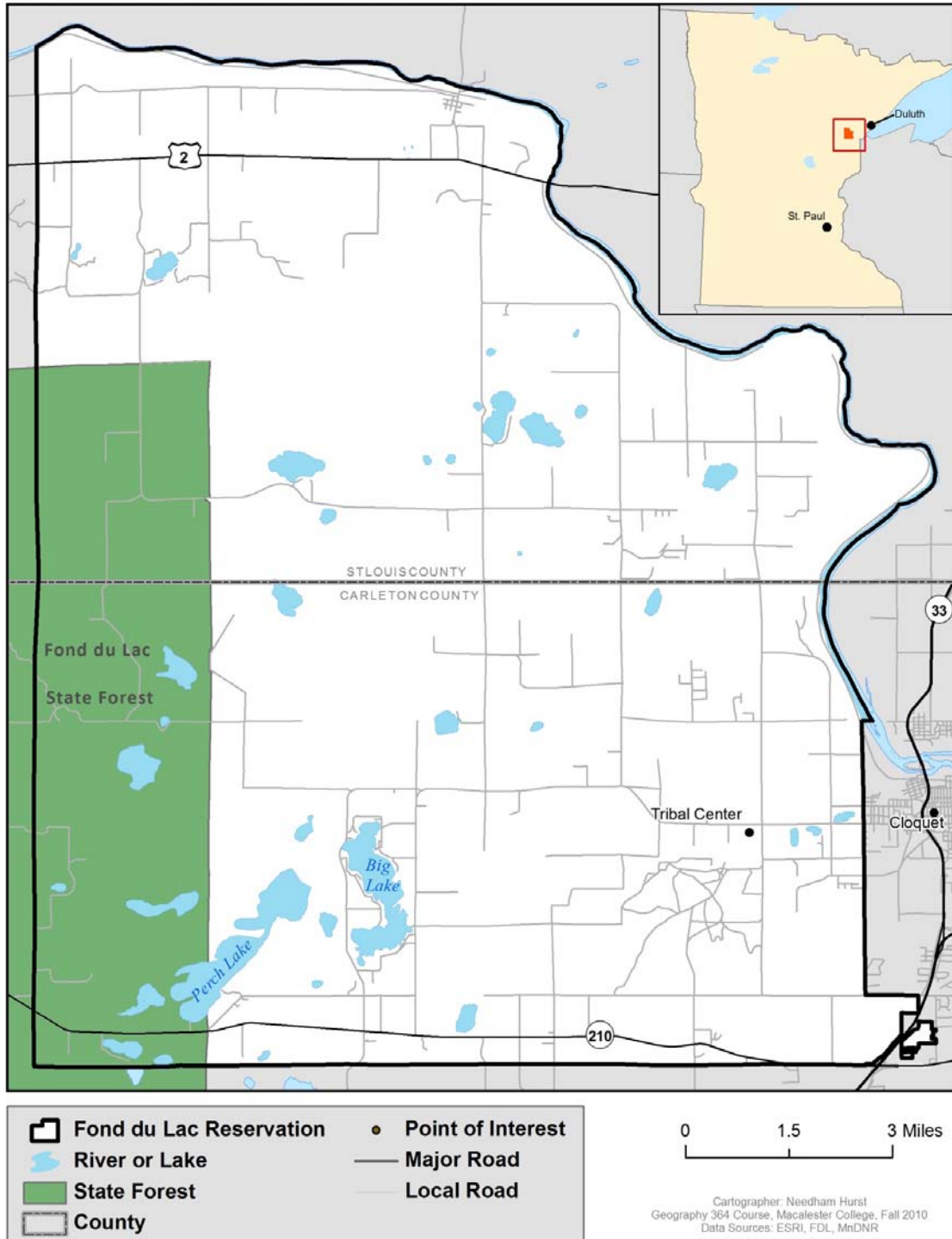


Figure 8.2: American Indian Trust Land – Fond du Lac Reservation

Indian Trust Land - Fond du Lac Reservation

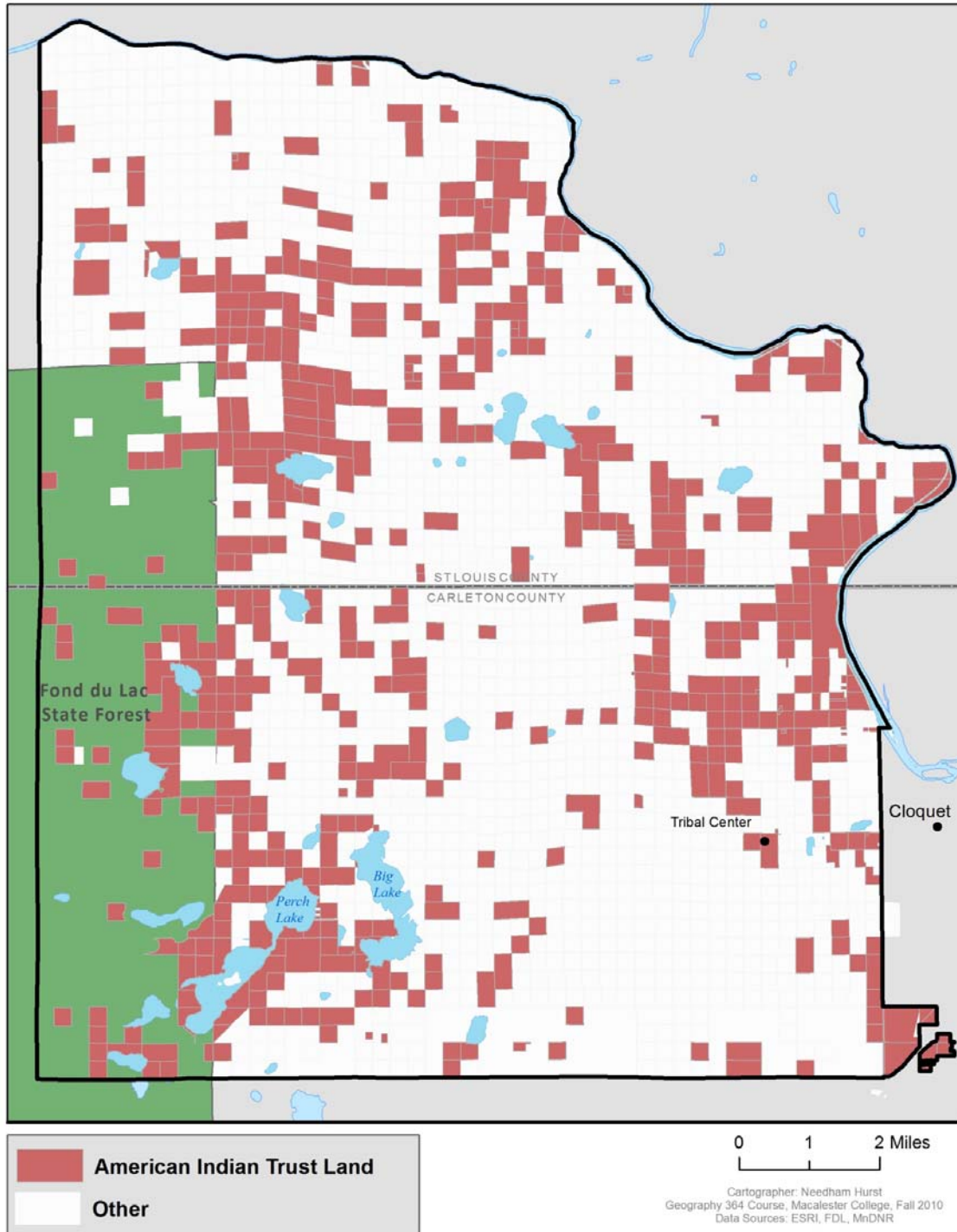


Figure 8.3: Population Density for reservation and surrounding areas

Fond du Lac: Population Density - 2000

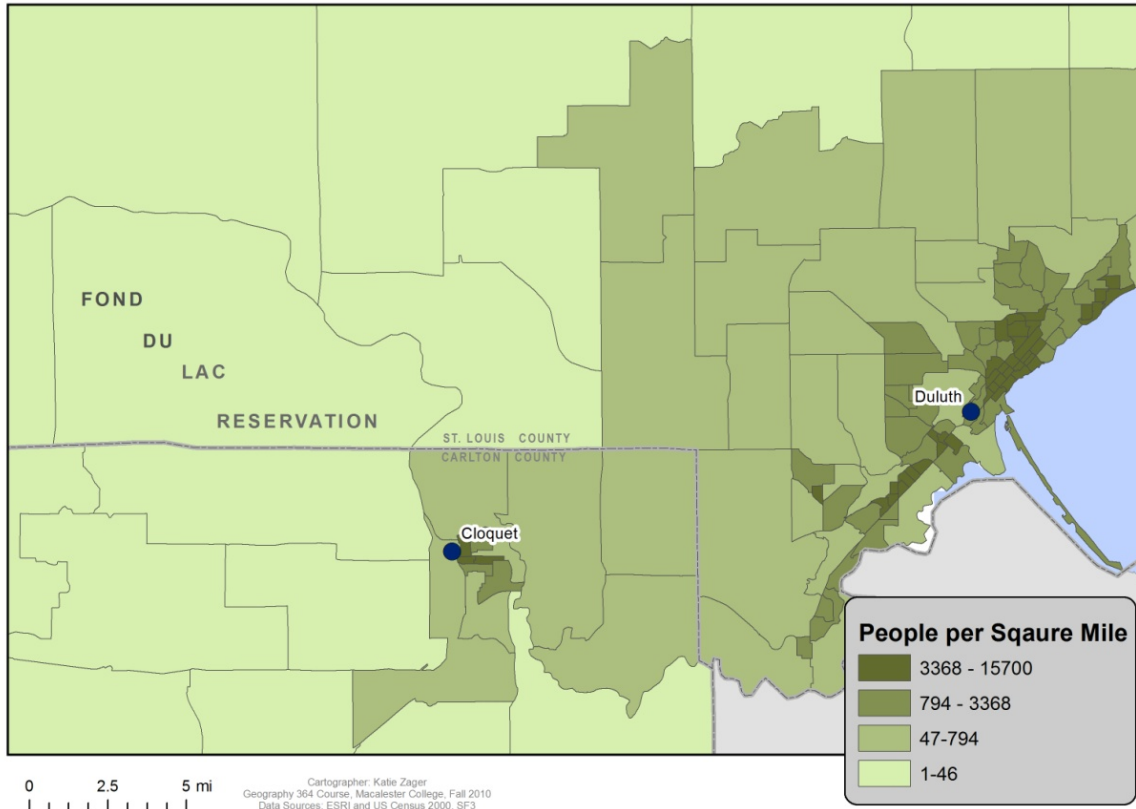


Figure 8.4: Median Household Income for reservation and surrounding areas

Fond du Lac Median Household Income – 1999

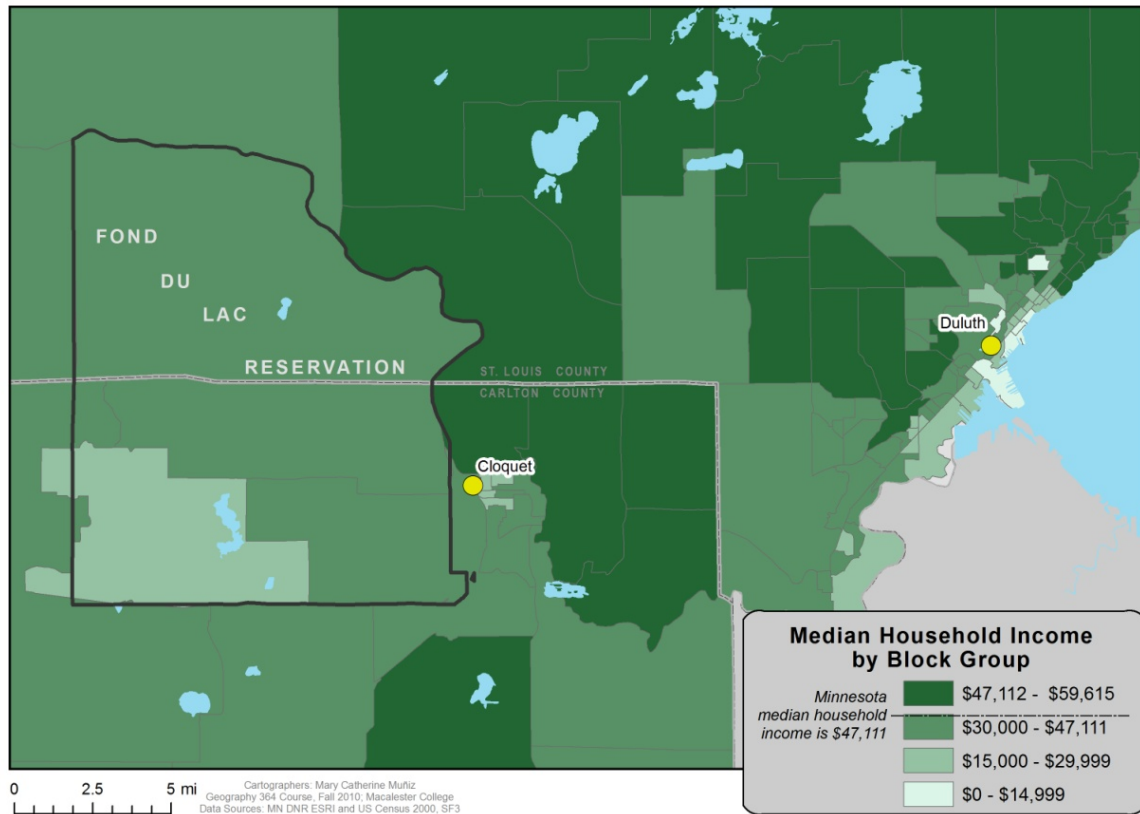


Figure 8.4: Racial Composition

Fond du Lac Percent American Indian – 2000

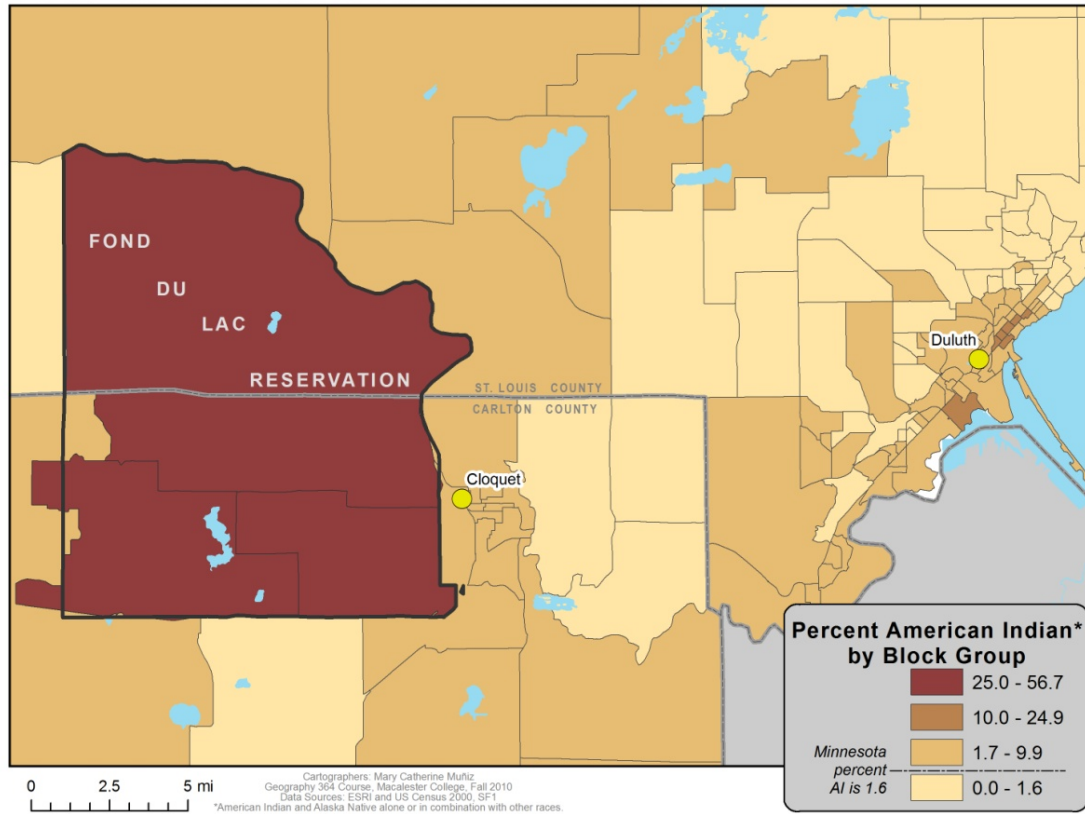
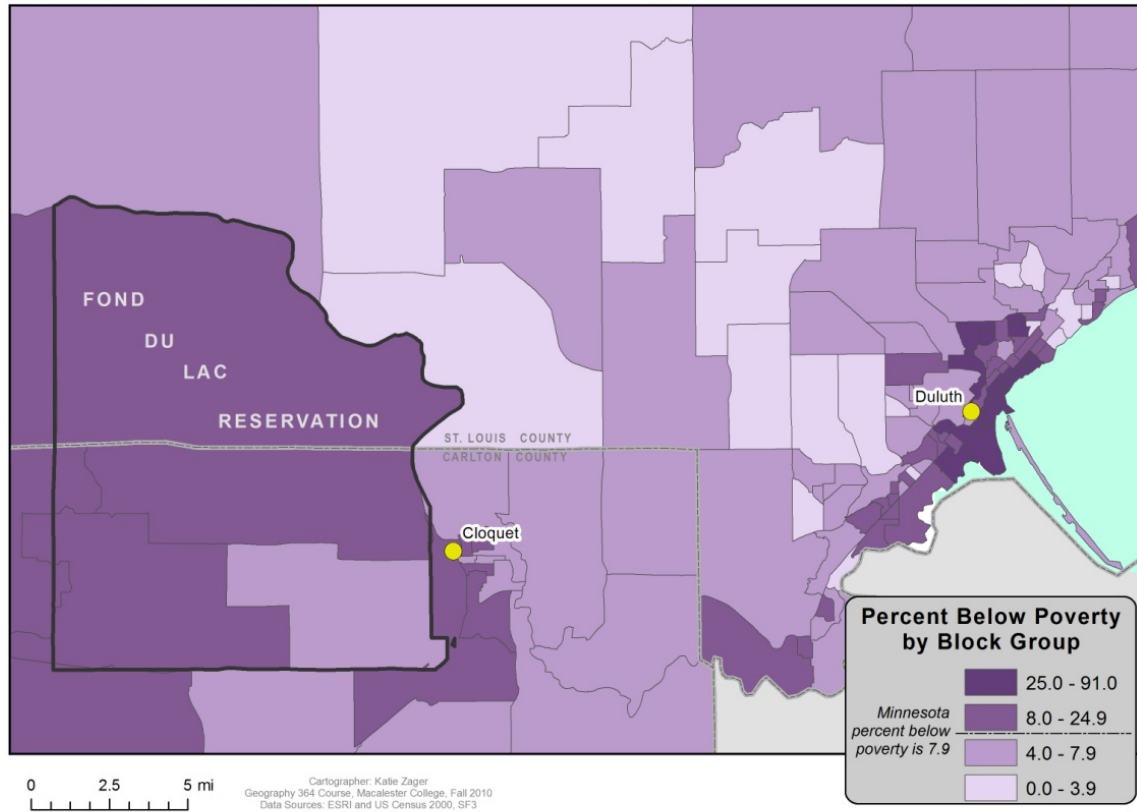


Figure 8.5: Poverty Status

Fond du Lac: Percent Below Poverty – 2000



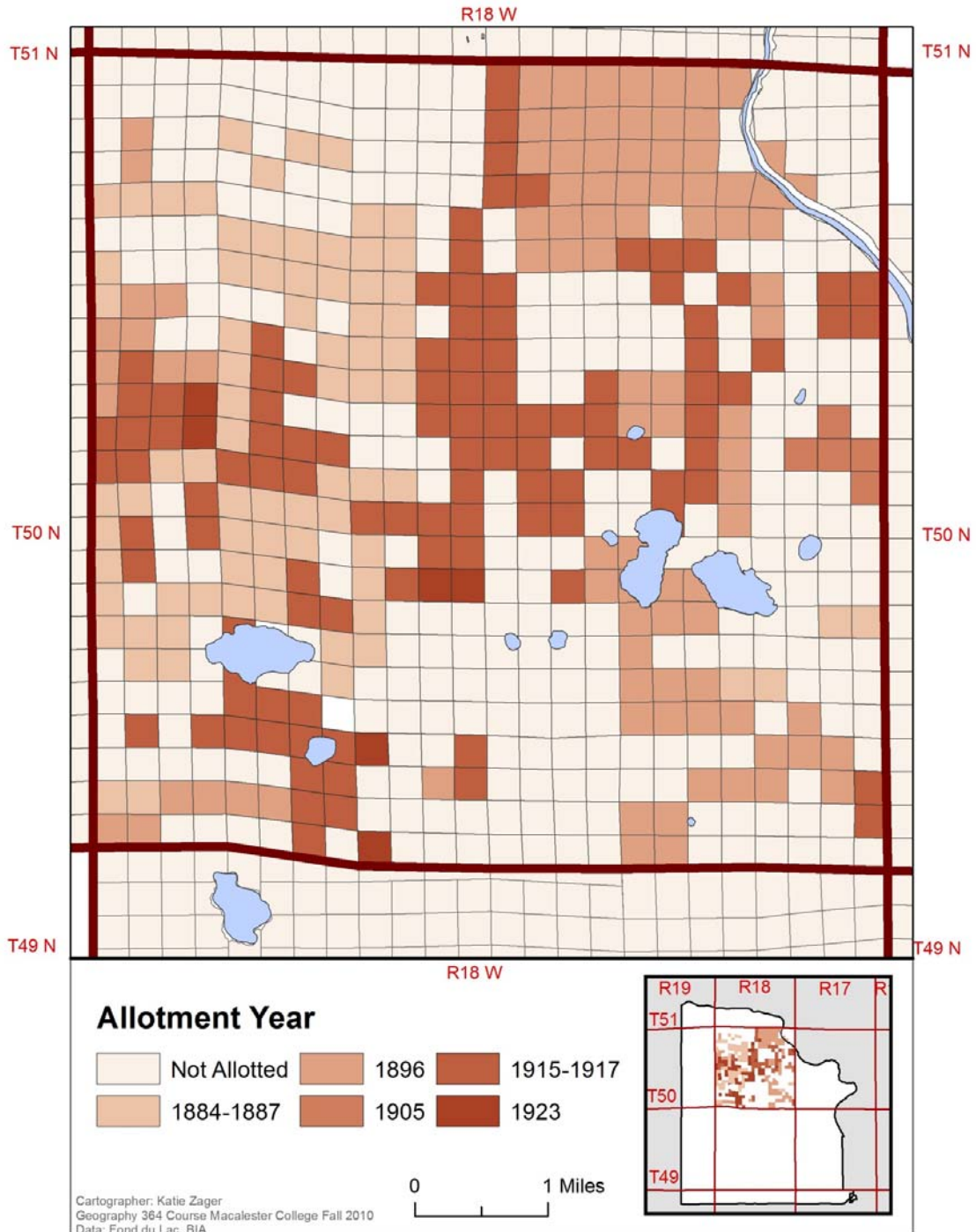
ALLOTMENT TIMELINE MAPS

Figures 8.7 and 8.8 show the timeline for lands that were allotted between the years of 1884 and 1923 in the areas encompassed by Township 50N and Range 18W and Township 49N, Range 18W. During allotment, individuals were allowed to choose a parcel of land for their family, ranging from 40 to 160 acres. The maps show 40-acre parcels. The allotment process began with the General Allotment Act of 1887. Most of the land in Fond du Lac however, was allotted after the passage of the Nelson Act on January 14, 1889 that specifically pertained to the Chippewa of Minnesota. Two-hundred-eighty-eight parcels of land were allotted from T50. There is a prominent cluster of land in the northeastern corner of the township that was all allotted at the same time—it turns out several family members decided to have adjacent land. This is a pattern that occurs throughout the map, only on a smaller scale. The final allotment of parcels occurred in 1923, after the government had already begun placing land in trust. Overall, 50 percent of the parcels were allotted from Township 50, encompassing 11,303 acres of land.

Figure 8.8 (T49) shows distinct patterns. Of the 214 allotted parcels, 154 parcels (27 percent of total township area) were allotted in 1896. In this area there is a clear pattern to which land was allotted. There was a preference for land around Big Lake and Perch Lake—two major wild rice growing lakes in the area.

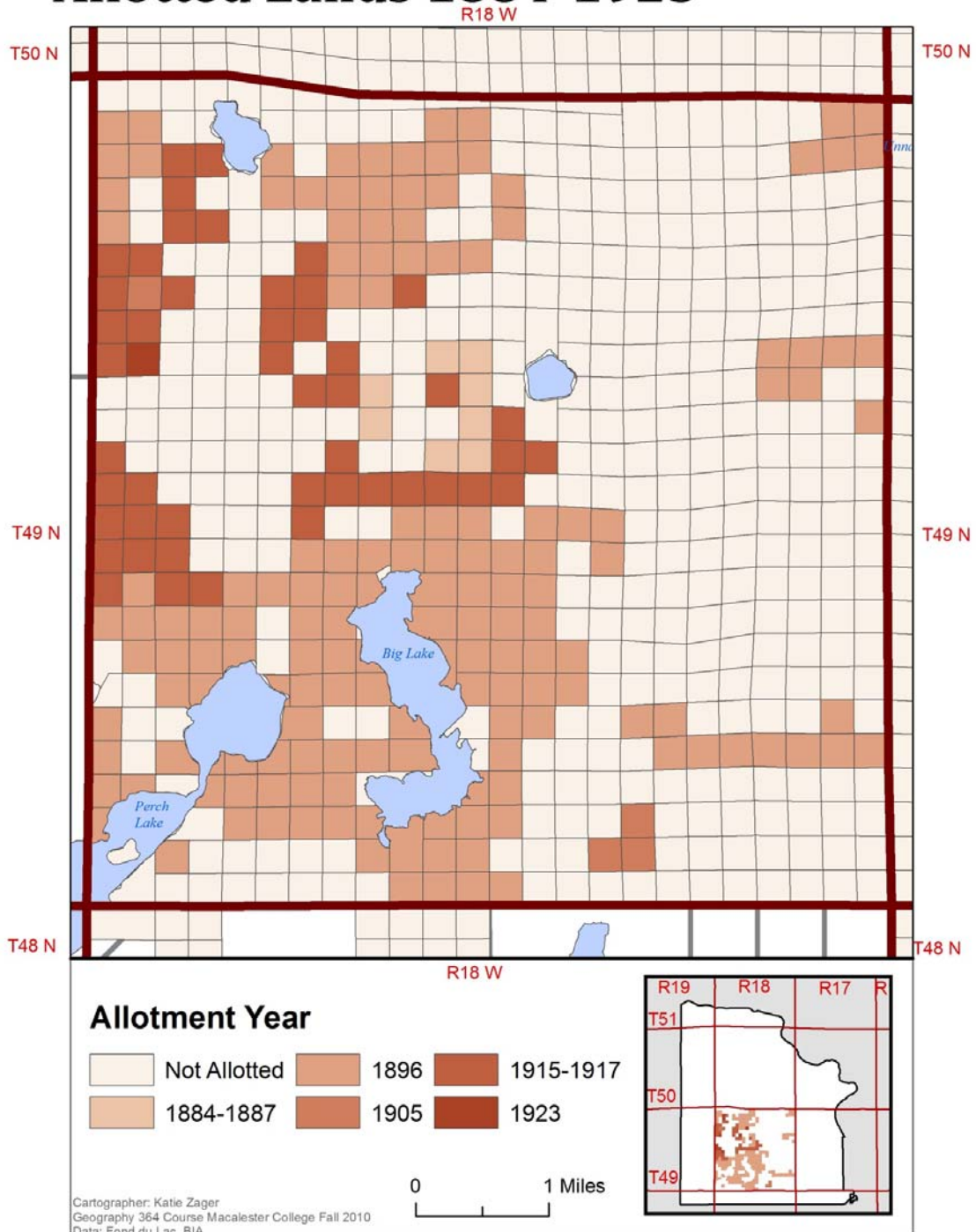
Map 8.7: Timeline of Allotment, 1884 – 1923

Allotted Lands 1884 - 1923



Map 8.8: Timeline of Allotment, 1884 – 1923

Allotted Lands 1884-1923



Trust Timeline Maps

Figure 8.9 and Figure 8.10 show the timeline for parcels of land that went into trust for township 50N, range 18W, and township 49N, range 18W, from 1896 to 1927. In township 50N, 214 parcels went to trust during the period, representing 34.2 percent of the township area. After 1927, the data contain no records of land going into trust for individuals (although the tribe put many lands in trust). Chart 8.1 shows the timeline for parcels put into trust. Lands were allotted in January of 1896 and placed into trust in May 1896. Another surge of transfers to trust occurred between 1911 and 1919 as owners re-enter lands into trust after the Burke Act forced many lands into fee simple.

In contrast to the other township, Figure 8.10 for township 49N shows a clear spatial and temporal clustering around Perch Lake and Big Lake. In the township, 35.7 percent of the 23,850 acres of land was transferred into trust during the period, and the majority was around the wild rice lakes (see Chart 8.2). This area was added to the reservation during an appeal of the 1854 Treaty in exchange for less territory to the west.

Chart 8.1: *Transfer to trust status by time period*

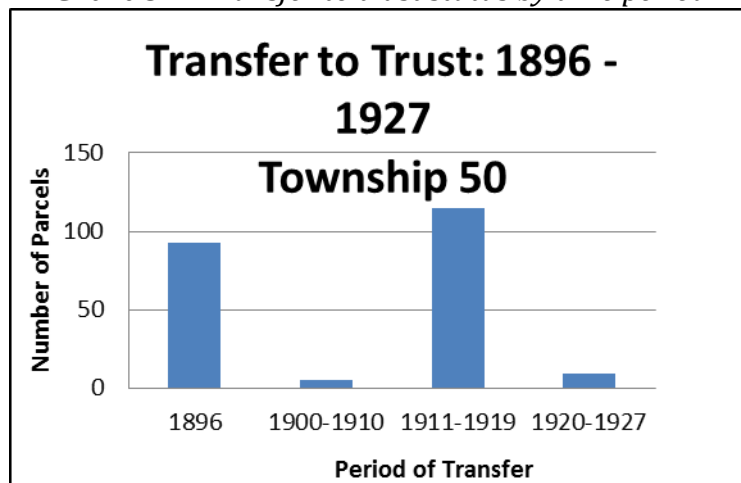


Chart 8.2: *Transfer to trust status by time period.*

Transfer to Trust: 1896 - 1927

Township 49

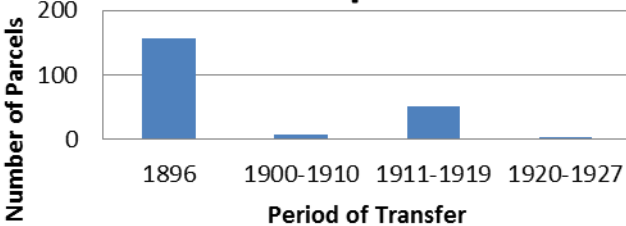


Figure 8.9: Timeline of lands transferred into trust, 1896 - 1927.

Trust Lands 1896 - 1927

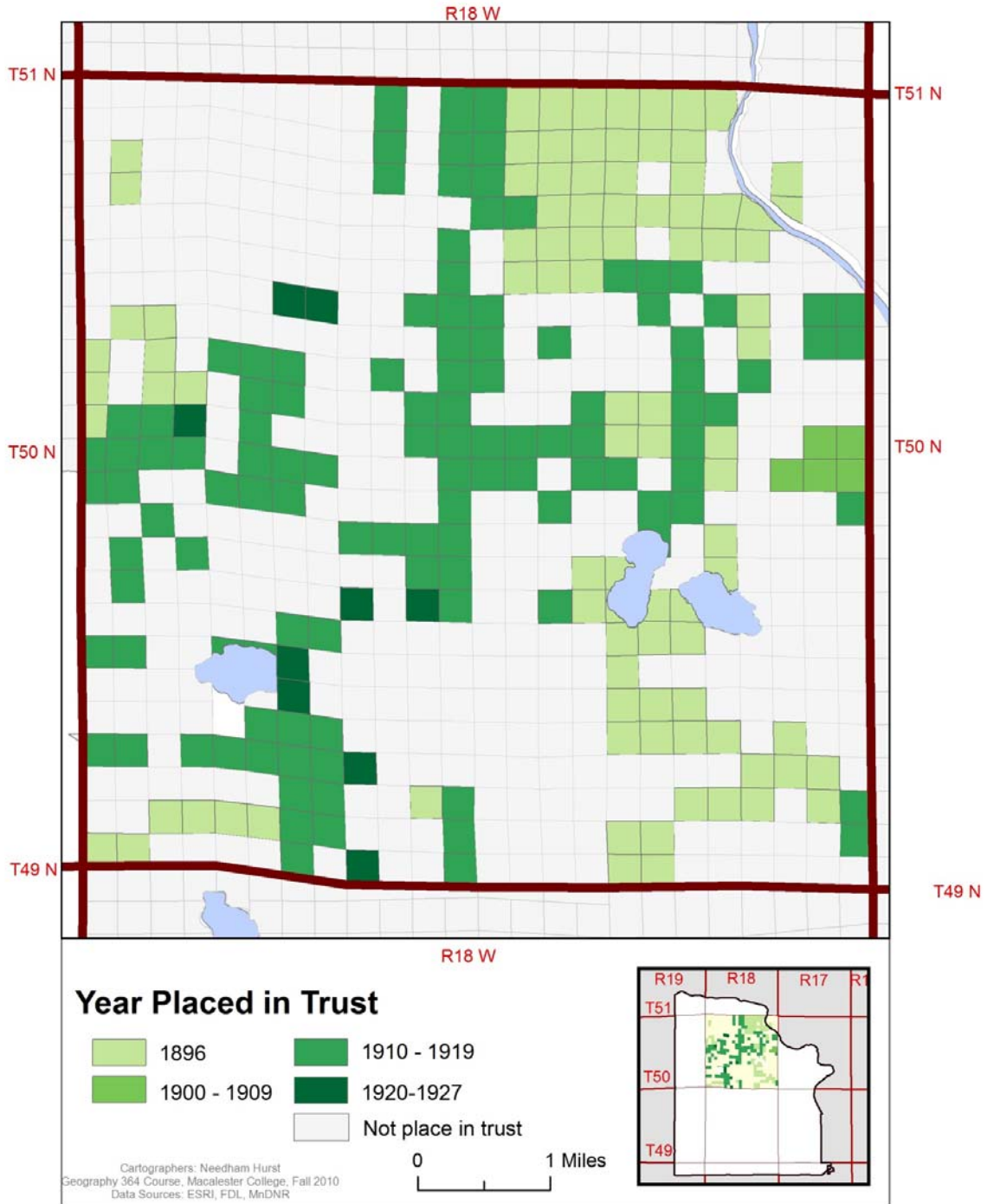
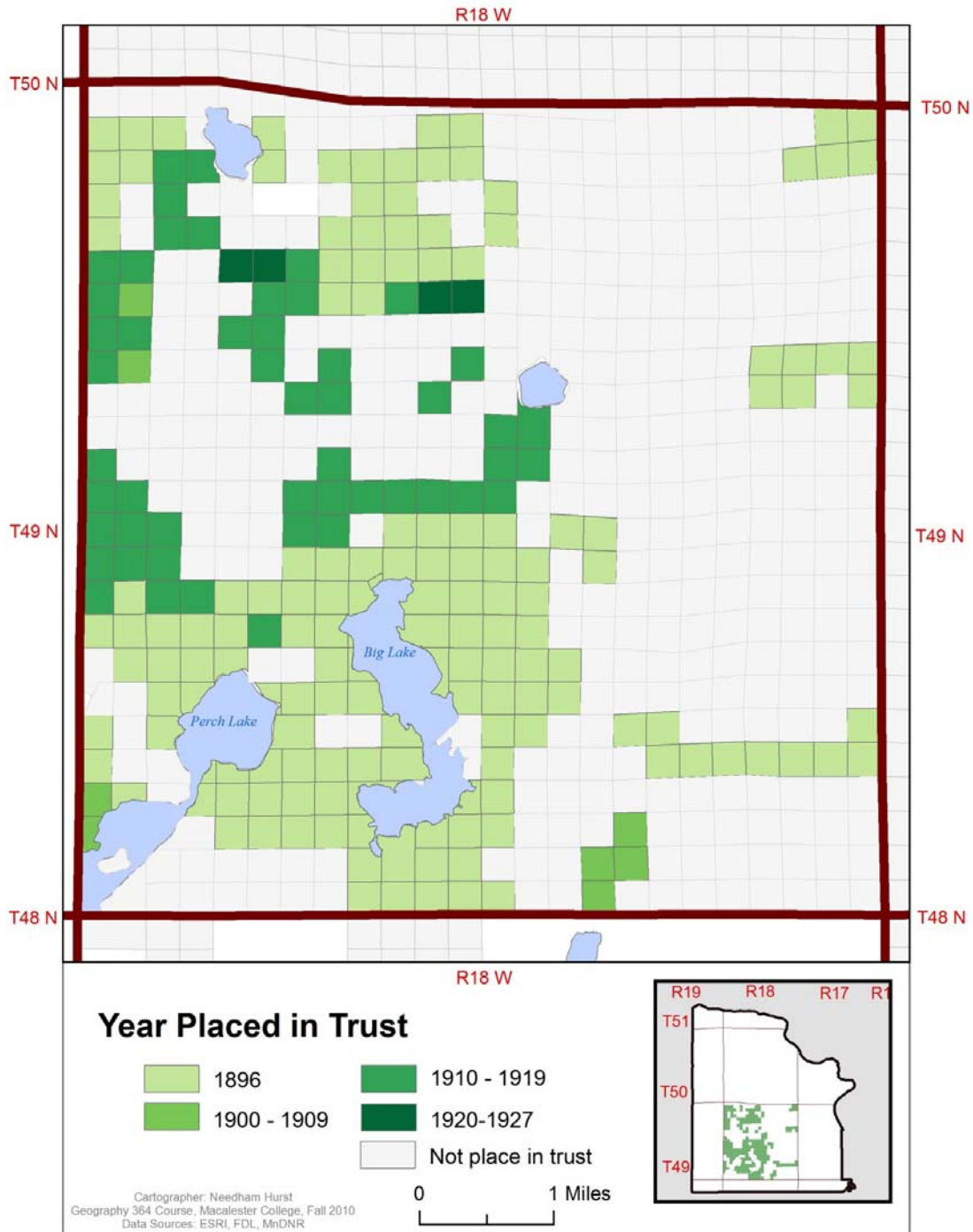


Figure 8.10: Timeline of lands transferred into trust, 1896 – 1927

Trust Lands 1896 - 1927



FEE TIMELINE MAPS

Figures 8.11 and 8.12 depict the timeline of when land in the reservation was granted as fee patent by the United States to an individual owner. The majority of land in townships 49 and 50, 53 percent in township 49 and 49 percent in township 50, on the FDL reservation was granted as fee patent to private owners between 1905 and 1924. These dates correlate with the Burke Act which allowed the U.S. government to deem an owner competent and thus able to hold land in fee (ILTF 2010). Between 1925 and 1944 very few, only .007 percent and .005 percent in townships 49 and 50 respectively, fee patents were granted. There was a slight increase in granted fee patents after 1945, with 11.8 percent and 7.3 percent of historical fee lands being granted during this time. The reason for this increase should be studied further. By 1987, 63.7 percent of the land in township 49 and 52.4 percent in township 50 had been granted as fee.

Figure 8.11: Timeline of lands transferred into fee patent, 1905 – 1987

Fee Lands 1905-1987

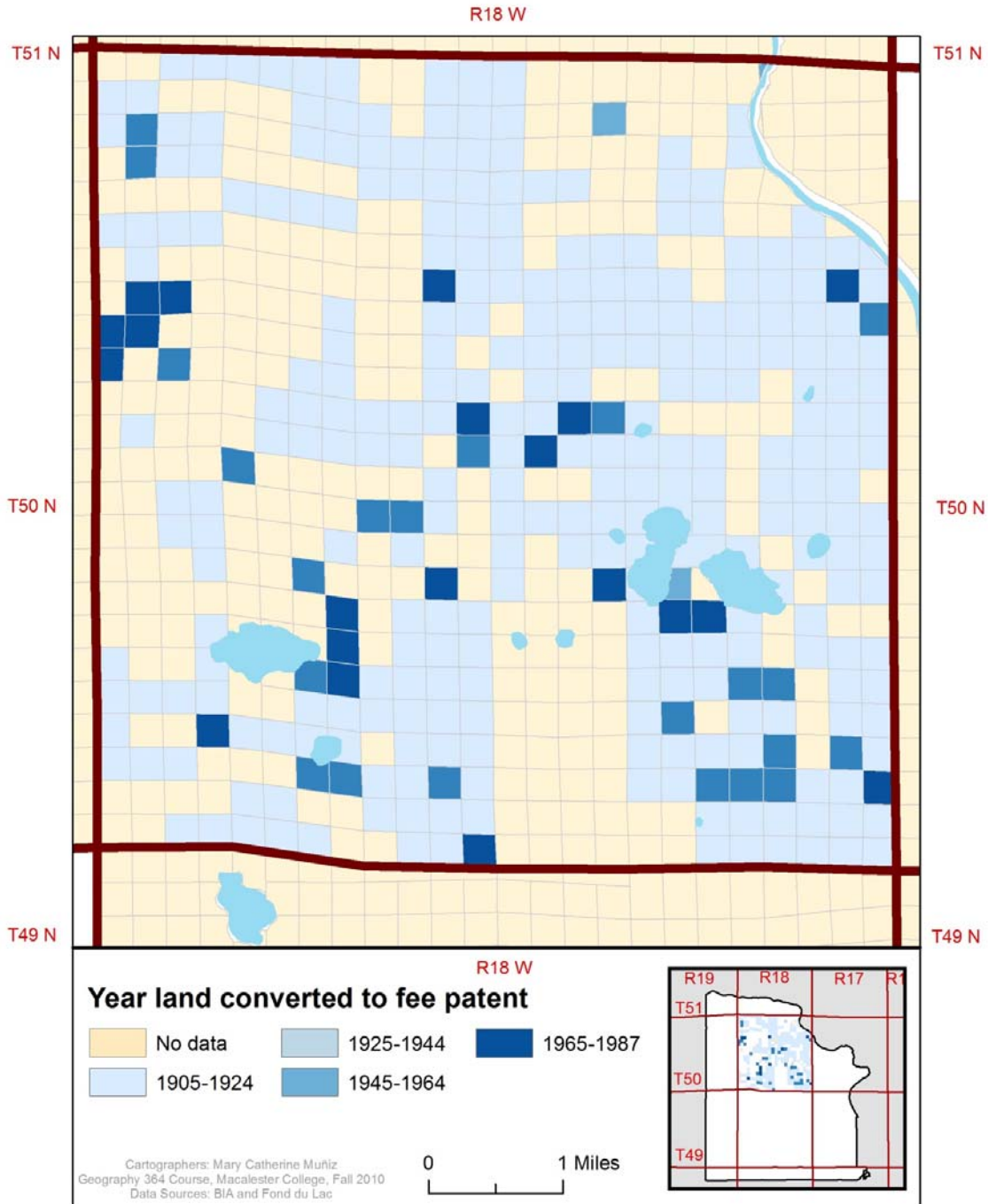
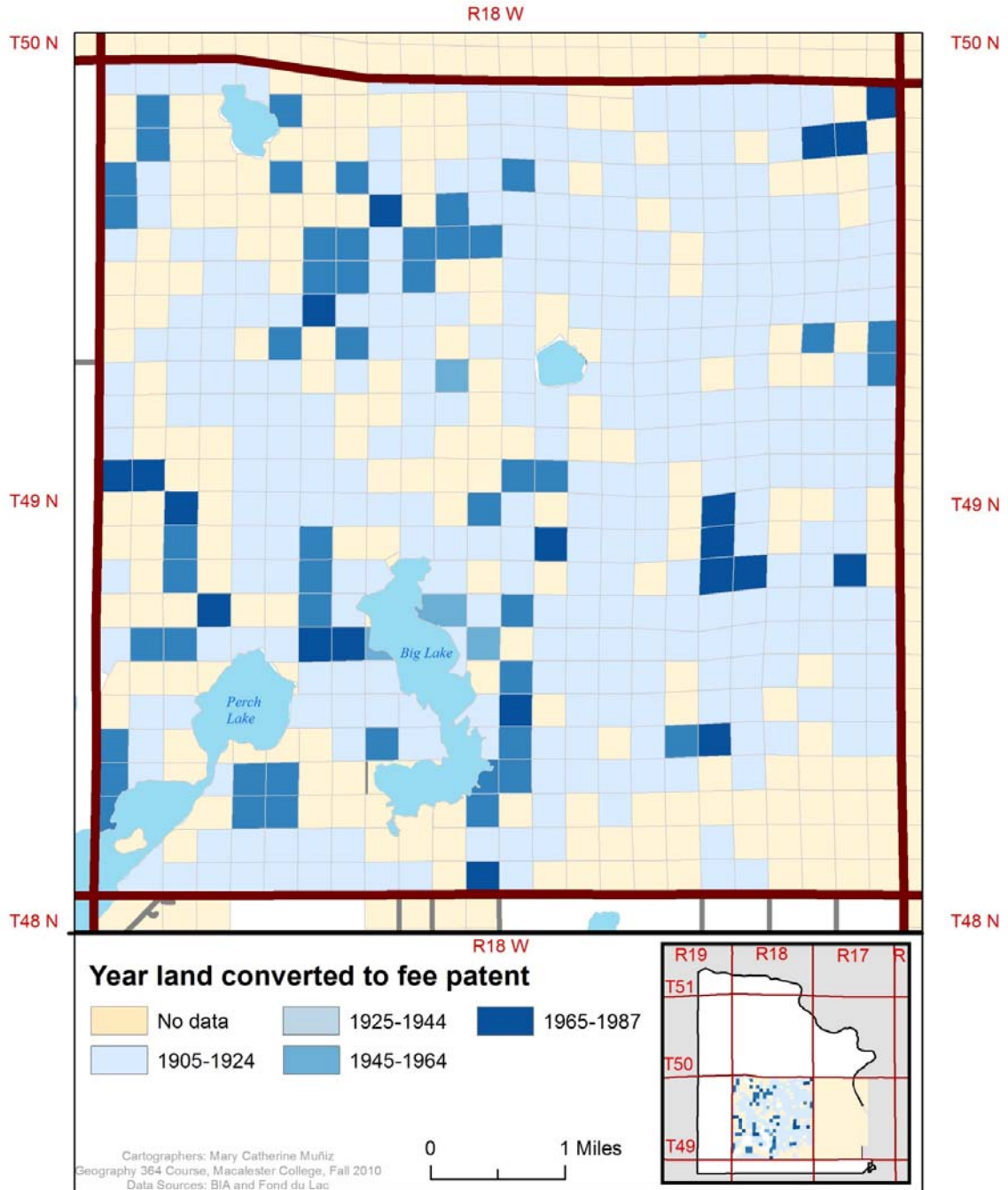


Figure 8.12: Timeline of lands transferred into fee patent, 1905 – 1987

Fee Lands 1905-1987



ALLOTTED LAND TRANSFERRED INTO TRUST

Figures 8.13 and 8.14 show whether or not allotted land was put into trust in the Township 50N, Range 18W and the Township 49N, range 18W. The periods in which land was being allotted and land was put into trust overlap considerably, so there were many tenure changes during this time. Most land was allotted and then put in trust less than a year later, with 79 percent of allotted land ending up in trust. Additionally, some land (1,140 acres) went straight into trust, without ever having been allotted. Not all allotted land was put into trust however, with over 4,000 acres (< 10 percent of total land in the two townships) still allotted to individuals by 1927. At the end of the allotment to trust transfer, Indian land (both allotted to tribe members and held in trust for tribe members) accounts for only 47 percent of the total area in these two townships. That means 53 percent of the land in the two townships may have been sold off or converted directly to fee-simple for non-Indian use.

TRANSFER OF ALLOTTED LANDS TO FEE: 1896-1987

Figures 8.15 and 8.16 display the land in the two townships that was allotted under the Nelson Act of 1889 and if these lands were transferred into fee simple. Only 36 percent of granted fee parcels were previously allotted lands. This shows the process of deemed excess lands being granted in fee to non-Indians. This process is interesting to view as it illustrates the effect of national policies regarding allotment and fee on reservations within a very small area. In township 49, range 18 the allotted lands that were transferred into fee were concentrated around the lakes. In township 50, range 18 there was less of a visual pattern of allotted land that changed to fee, although these parcels are distributed in small clumps within the township.

TRANSFER OF TRUST LANDS TO FEE: 1896-1987

Figures 8.17 and 8.18 illustrate the land in the two townships that transferred from trust to fee before 1987. This shows that the land that became trust under the General Allotment Act was eventually granted as fee patent. 58 percent of trust land was later granted as fee land in these two townships. There are few distinct spatial patterns that can be identified from those lands that changed status from trust land to fee. The area around Big Lake is split between staying in trust and being converted to fee.

Historic vs. Current Trust Land

Map 8.19 and 8.20 compare lands held in trust for individuals between 1896 and 1927 (cross-hatch), current individual trust land (red), and tribal trust land (peach) in township 50N, 18W, and 49N, 18W. These data reveal an incredible amount of variation between lands in-and-out of trust in both areas. It appears that most of the historic trust lands are now in trust for the tribe or band. Currently, individual trust land tends to be owned

partially by the band. 34.2 percent of township 50N was historically in trust, now 31.9 percent is in trust. 41 parcels (9.1 percent of the township) are currently in trust for individuals. There is no clear spatial pattern to the variation in trust status over time, but overall the trend is a decrease in individual trust lands.

Map 8.20, which shows township 49N and wild rice lakes, the percent of land in trust dropped from 35.7 percent (1896 to 1927) to 26.8 percent (current). Today, 45 parcels (9.9 percent of township) are held in trust for individual heirs. In particular, Map 8.20 shows that the area to the northeast of Big Lake fell out of trust and Map 8.18 shows that it mostly went into fee-simple land between 1905 and 1924.

Figure 8.13: Transfer of Allotted Lands to Trust

Historical Transfer of Allotted Land into Trust 1896 - 1927

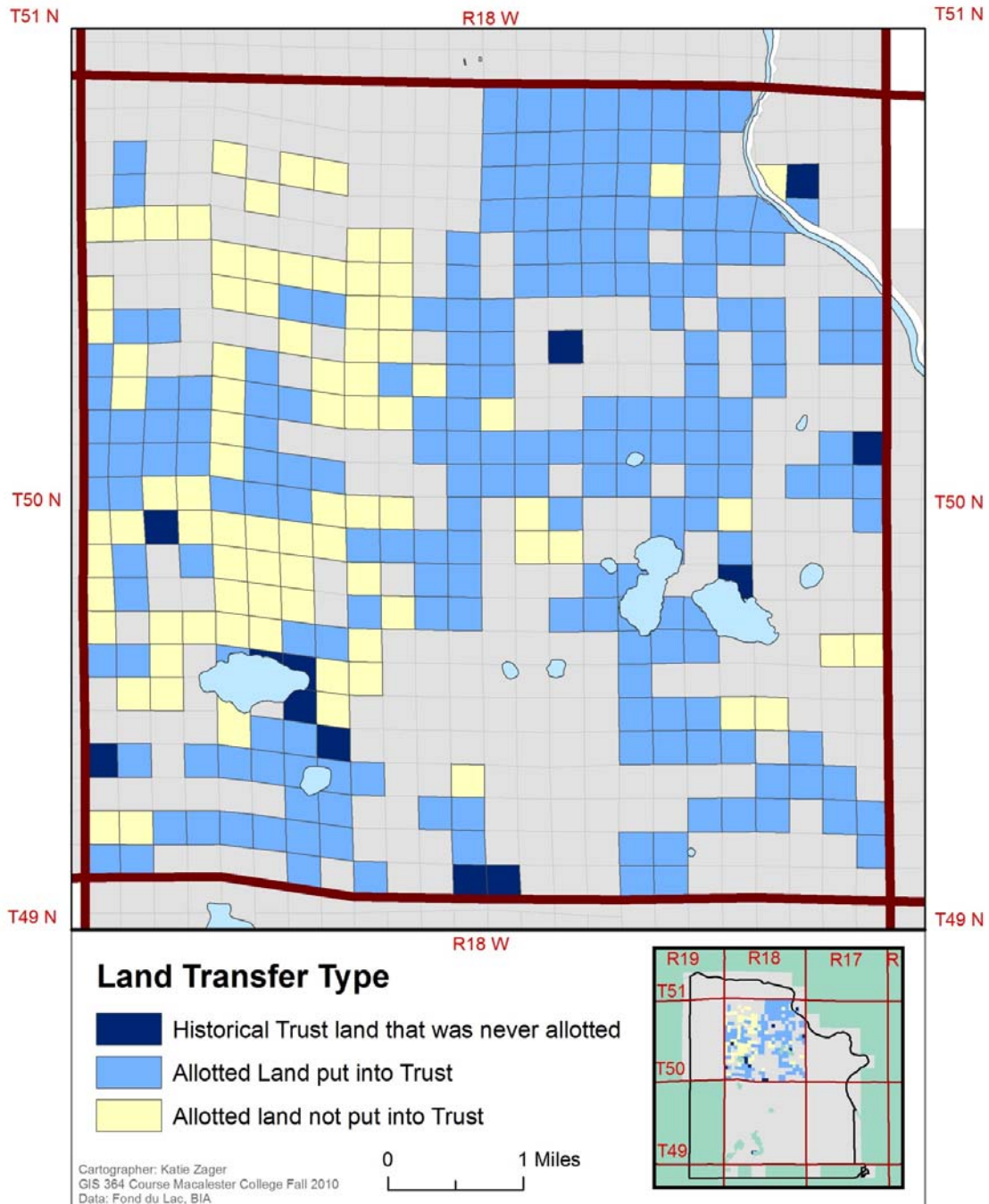


Figure 8.14: Transfer of Allotted Lands to Trust

Historical Transfer of Allotted Land into Trust 1896 - 1927

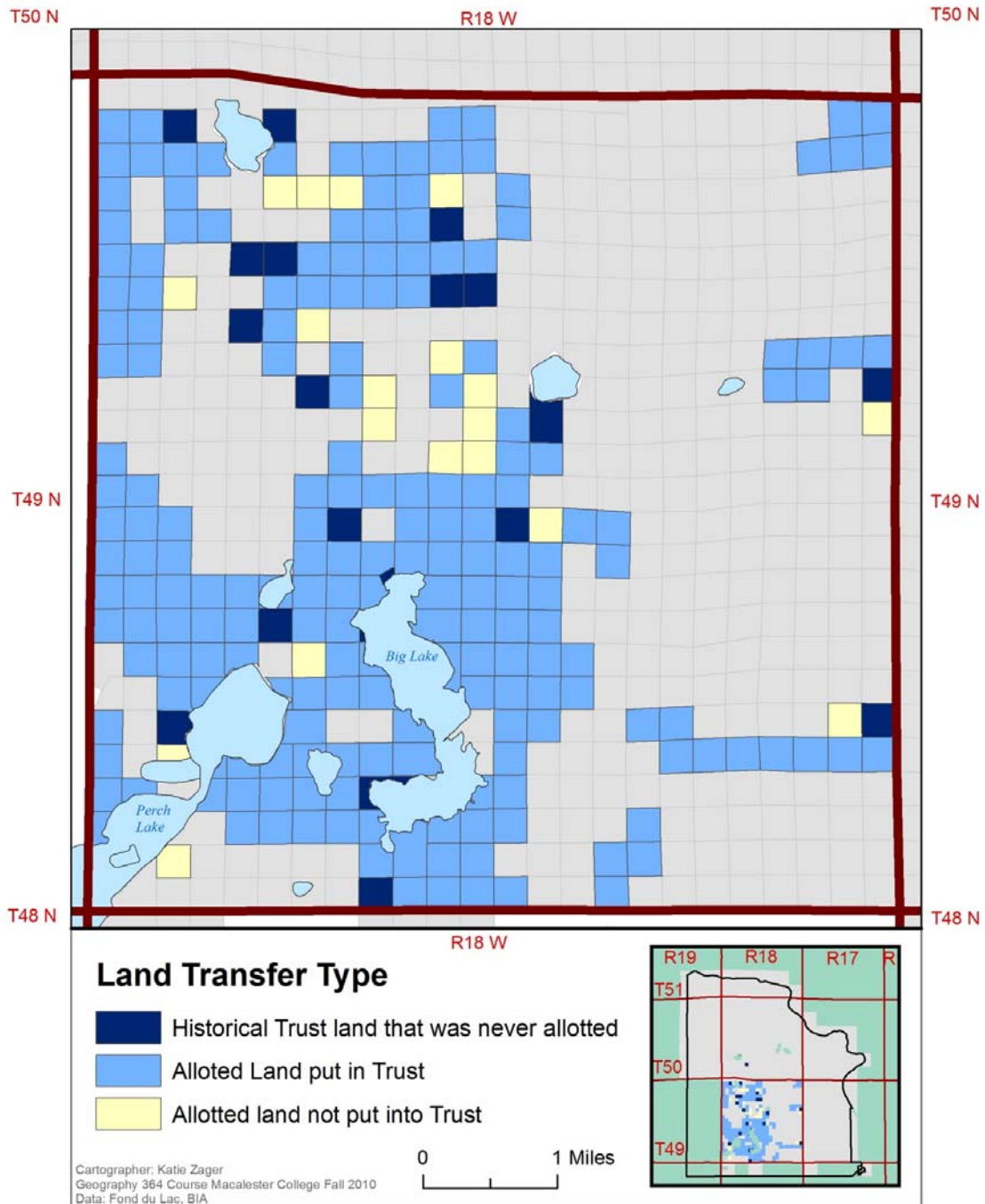


Figure 8.15: Transfer of Allotted to Fee Land, 1896 - 1987

Historical Transfer of Allotted Lands to Fee 1896 - 1987

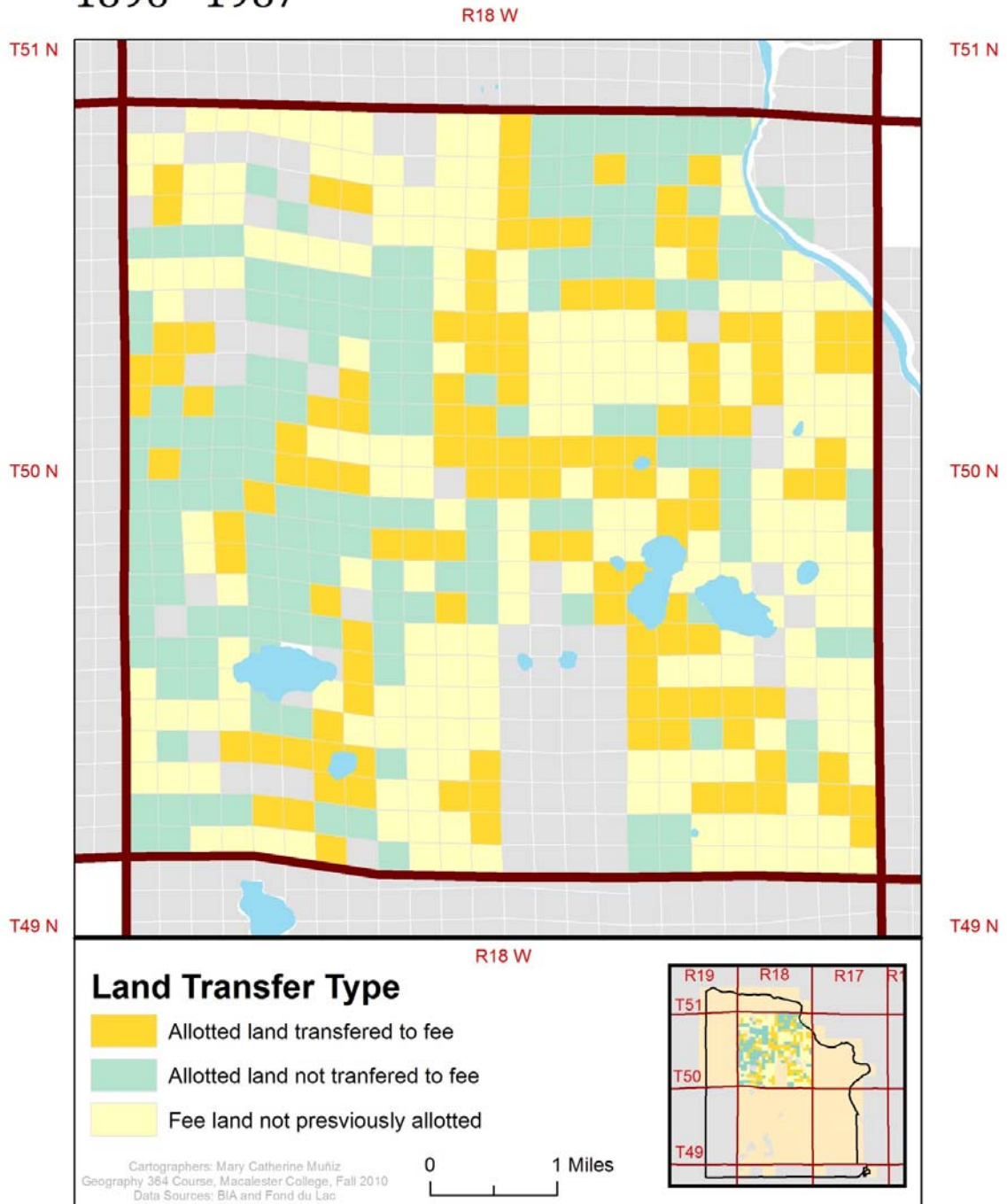


Figure 8.16: Transfer of Allotted to Fee Land, 1896 – 1987

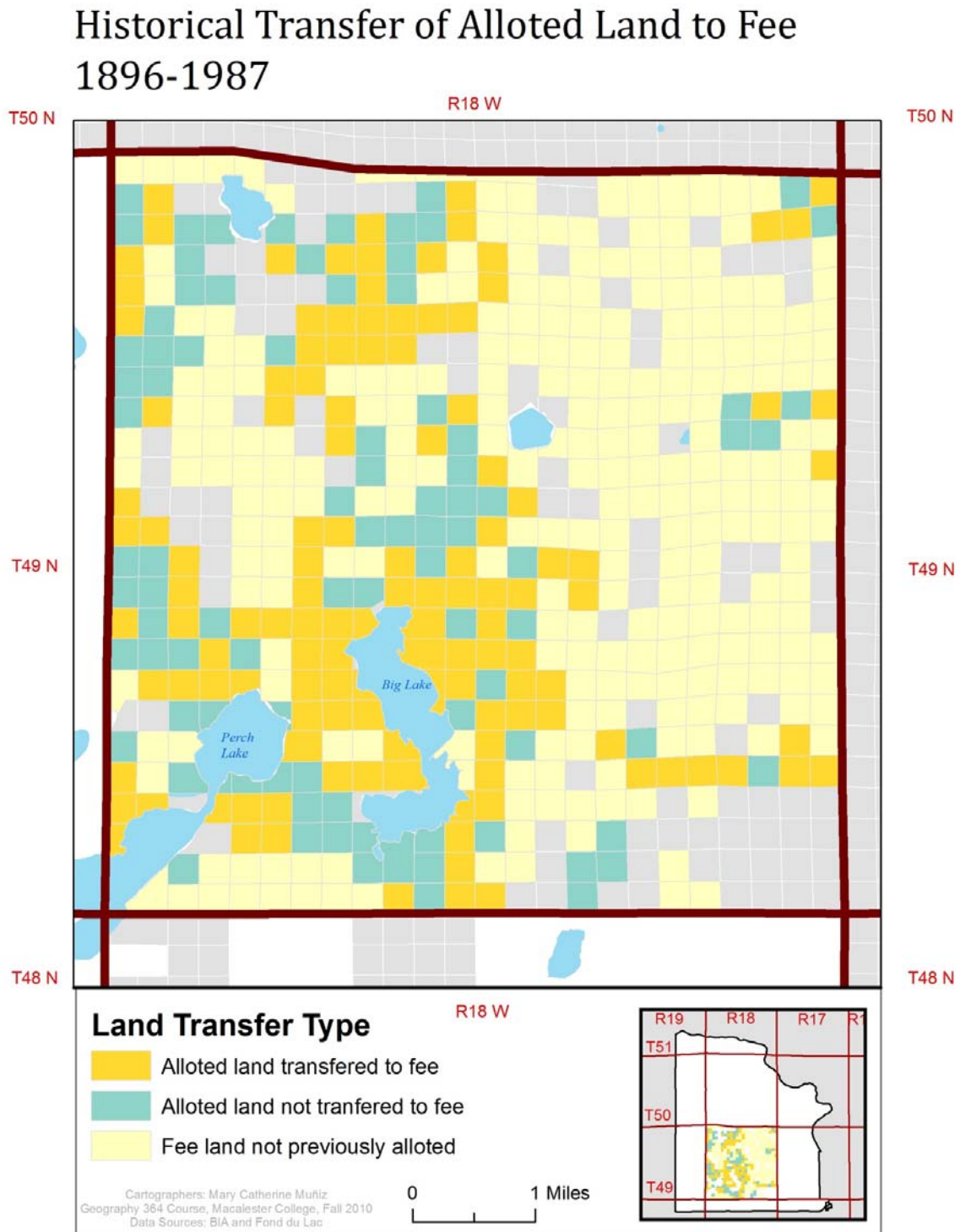


Figure 8.17: Transfer of Trust to Fee Land, 1896 - 1987

Historical Transfer of Trust Land to Fee 1896-1987

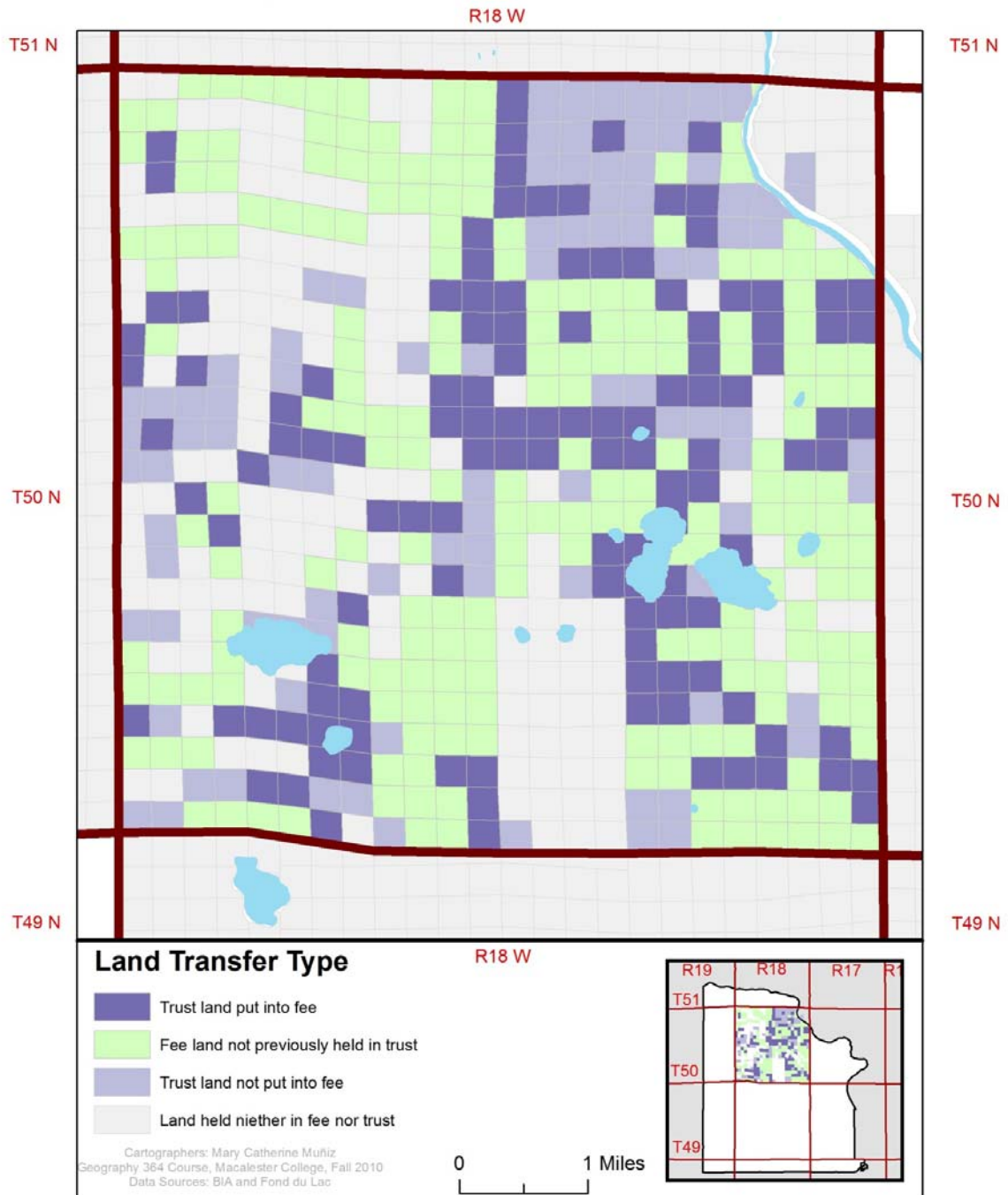


Figure 8.18: Transfer of Trust to Fee Land, 1896 - 1987

Historical Transfer of Trust Land to Fee 1896-1987

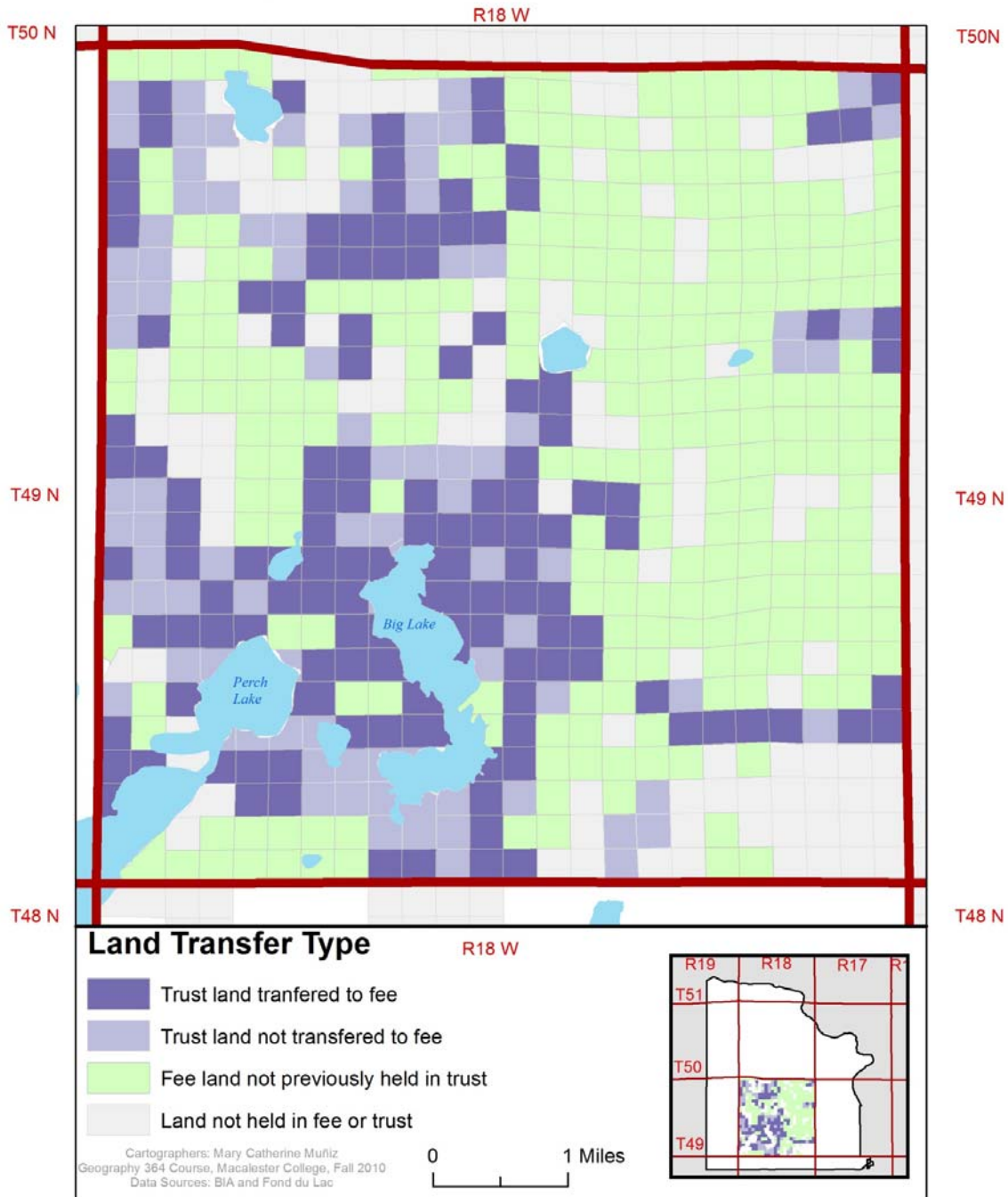


Figure 8.19: Current vs. Historic Trust Land

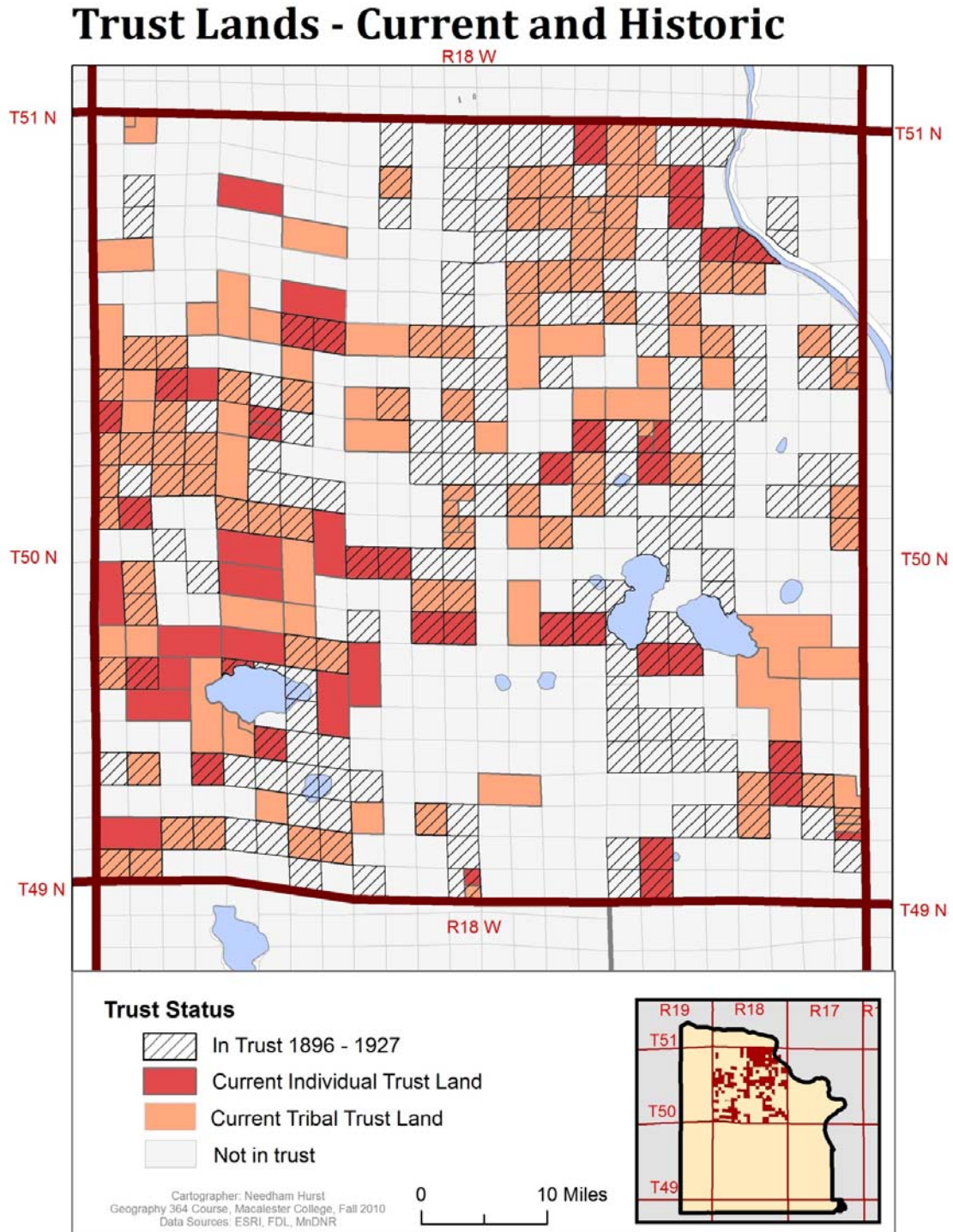
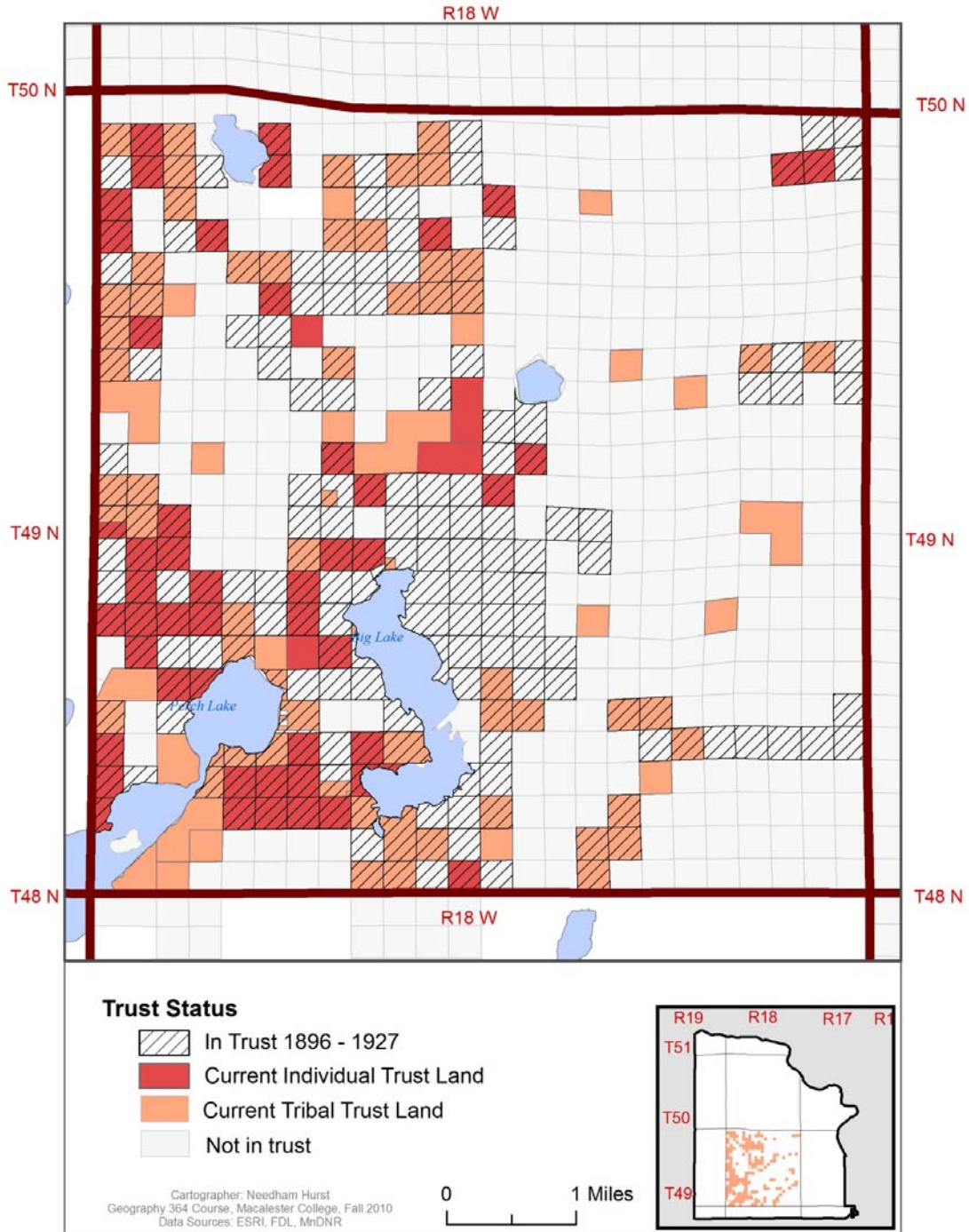


Figure 8.20: Current vs. Historic Trust Land

Trust Lands - Current and Historic



CONCLUSION

The demographic and land tenure history maps of the Fond du Lac reservation show patterns of alienation of tribal members from land, various issues with poverty, checkerboarding, and the privatization of land after the Burke Act (1906). These historical maps of land tenure are part of a broader effort to understand the history of this alienation of native people and to tell the story of land ownership changes. GIS gives us a clear way to visualize the process of allotment, transfer to trust, and privatization of American Indian lands.

In terms of demographics, the Fond du Lac reservation has a low population density compared to neighboring Duluth and contains some of the lowest median income block groups in the area. Much of the reservation is below median poverty level for the state of Minnesota, which is consistent with surrounding areas and areas in Duluth. While the reservation population has the densest population of American Indians, areas around the reservation and in Duluth have relatively large American Indian populations as well.

The historic and spatial patterns of land tenure on the Fond du Lac reservation provide concrete evidence of the effect of national policies regarding allotment, trust and fee lands on reservations. Our maps show how the “excess” land after allotment was opened up to private ownership, particularly in township 49N and areas northeast of Big Lake. The maps also show the effect of the Burke Act with the transfer from trust to fee lands after 1905.

Patterns in the historical allotment process show that around half of each township was allotted. When individuals selected which land they wanted to be allotted (or were assigned) there was a clear preference for land around the two wild rice lakes and a preference for family members to have adjacent land. A considerable amount of allotted land was placed into trust, and more trust land was added to existing allotted lands. However, through the allotment to trust process, 53 percent of the land in the two townships was never allotted to or placed in trust for Indian residents.

Much of the trust land has since been converted to fee simple private land. Map 8.19 and 8.20 show that the tribe or band has acquired the historic land that was in trust for individuals. Trust land for individuals has decreased greatly over the last century. The reason trust land on the reservation overall has gone down slightly is because of the efforts of the tribe to preserve that land.

Unfortunately, not all land has been able to stay in trust. In particular, areas to the northeast of Big Lake have fallen out of both tribal and individual trust. They may be controlled by the tribe or band members through fee patent, but this information was not available to the researchers. The maps reveal that trust land had dropped more than 9 percent over the last ninety years. Overall, we are surprised by the effects of the Burke Act and how events that occurred 80 years ago continue to define the spatial pattern of trust land on the reservation today.

The digitization process for these land index records is not complete. These two townships represent a large portion of the reservation area but about $\frac{1}{4}$ of the reservation still needs to be digitized. Opportunities exist to expand the digitization to include the process of fractionation through probate sales. We anticipate future directions for improving and using this data will come from the Fond du Lac reservation. Such projects might include researching the correlation between historic land tenure in current socio-economic characteristics, integrating the historical database created here with current land tenure information, and performing case studies on how historic land tenure changes have affected tribal members.

PROJECT CONCLUSIONS

This project is the first effort to create a Minnesota-wide Indian land tenure database. The maps and statistics shown in this report are snapshots of land ownership on reservations today, and we anticipate they will serve as a foundation for future work by the Indian Land Tenure Foundation. We hope that tribes will find this information useful as a resource for addressing land development and land tenure issues on their reservations.

GIS is a practical way to visualize the spatial patterns of land tenure on reservations. Using maps, we have been able to draw connections between land tenure and socio-economic characteristics, retell the story of allotment and checkerboarding and offer suggestions for future land acquisition. The following are some summarizing statements about the themes studied in this report.

LAND TENURE

The majority of American Indian reservations in the state of Minnesota have experienced significant land loss. The allotment process which began in the late 19th century is the primary factor in creating non-American Indian land ownership within reservation boundaries. Growing concern over land loss and other land tenure issues have made American Indian land tenure questions a core issue for many American Indian nations as well as groups such as the Indian Land Tenure Foundation. Our research revealed that most reservations in Minnesota are experiencing problems related to land tenure.

Non-American Indian ownership is a major concern to most the American Indian nations in Minnesota. These issues include private ownership of reservation land by people and corporations, national forests or other protected areas inside reservation boundaries, and artificially inflated land prices from tourism or owners that are aware of land acquisition goals held by American Indian nations in Minnesota. Non-American Indian ownership creates jurisdictional issues on reservations and threatens sovereignty and self-

determination for American Indian nations within reservation boundaries. However, some reservations have been very successful at maintaining land or acquiring land (such as the Upper and Lower Sioux reservations, Shakopee, and Prairie Island). Unfortunately, the amount of land not held in trust for most reservations is significant. Non-American Indian land ownership is of great concern to the Mille Lacs band, for example, who compete with tourists for land along their lakes. Most of the land within Leech Lake is a national forest. The White Earth reservation holds little of the more developed eastern half of the reservation in trust. Only 30.2 percent of the Fond du Lac reservation is currently in trust status. The Bois Forte reservation land is held in mixed ownership between private ownership and band ownership. Land ownership is an issue faced by the majority of reservations in Minnesota.

These land ownership issues have created diversity of land tenure status that is also the cause of checkerboarding. The Leech Lake and Bois Forte reservations are examples of reservations experiencing significant checkerboarding. The inconsistent land ownership patterns that have resulted in checkerboarding make utilizing reservation lands for many economic activities such as agriculture difficult. The diversity of land ownership status inside reservations across Minnesota hinders the ability of the tribes to maximize the value of their existing land. Another trend that hinders effective land use is fractionation. Fractionation is caused by land allotments being passed down through generations as fractions of the title for the land rather than partitions of the land. In order to approve any use of the land, a majority of the title holders must agree to it. This is very difficult because in some instances, the fractionation has become so bad that there are hundreds of title owners (e.g. in Fond du Lac there are some parcels with over 600 people holding a portion of the title). Therefore, there are many barriers resulting from land tenure problems that prevent optimal land use of land in American Indian ownership.

DEMOGRAPHICS

DENSITY

The density (defined as persons per square mile) of the Indian communities varies greatly depending on the local setting of the reservation. For example, Fond du Lac is located in Cloquet, Minnesota and therefore has a relatively low population density. Similarly, Prairie Island although located close to Red Wing, is a very rural, agricultural landscape and therefore has a low population density. Leech Lake is also in a rural area, located near only smaller cities and a national forest, resulting in very low population densities. Shakopee, on the other hand, is located in a suburban setting of Minneapolis and has a relatively high density that reflects more general trends of the surrounding area. Some communities had variations within reservations such as White Earth, which has higher density around the tribe's casino and tribal offices.

RACE

The American Indian population seems to vary from reservation to reservation. On the smaller reservations, such as Shakopee, Prairie Island, and Upper Sioux and Lower Sioux, there are high concentrations of American Indians. Shakopee and Prairie Island also have large percentages of American Indians living outside of the reservation boundaries, either on off-reservation trust land, tribally owned land, or fee-simple land. Fond du Lac also has high percentages of American Indians living around the reservation. On larger reservation areas that have experienced checkerboarding, there are certain areas of high percentages of American Indian populations. This was the case in Mille Lacs, with large pockets of tribe members within and outside the reservation boundaries. Another interesting trend is that reservations that are situated near urban areas tend to have large American Indian populations on tribal lands and in the nearby cities. For example, many Fond du Lac tribe members live in Duluth and Prairie Island tribe members live in Red Wing.

INCOME

The median household income within each reservation depends on several factors. Reservations like Shakopee and Lower Sioux have higher incomes relative to surrounding areas because of casino revenues. Mille Lacs reports income levels consistent with the surrounding county. However, not all reservations with casinos report high median incomes. The Fond du Lac reservation contains some of the lowest median income block groups in the greater reservations area. Upper Sioux had a low median income compared to surrounding areas in 1999, although their new casino may help that reservation economically. Similarly, Prairie Island owns the relatively successful Treasure Island Casino, but has some of the lowest median household incomes in the area. Leech Lake also demonstrates a similar trend, where much of the reservation has less than a \$29,000 median household income, significantly lower than the surrounding areas.

POVERTY

The percent of the population in poverty follows a similar pattern as median household income, but not exactly. Shakopee has a very low poverty rate, while the Leech Lake and Upper Sioux and Lower Sioux are well above the Minnesota average of 7.9 percent. White Earth has spatially disparate poverty rates; areas with large populations of American Indians show much higher poverty rates than areas within the reservation with large white populations. This also matches up with land use patterns on White Earth. Other reservation like Fond du Lac, Mille Lacs, and Prairie Island show greater variation in poverty rates.

HISTORICAL

Two groups worked closely with the Fond du Lac and Grand Portage reservations to investigate historical topics. For the Fond du Lac group, the reservation provided them with documentation of land tenure status from 1884 to 1987, allowing them to map the historic process of allotment to trust to private status. The historic and spatial patterns of land tenure on the reservation provide concrete evidence of the effect of national policies regarding reservation lands. The maps show how non-allotted land was opened up to

privatization after the Burke Act in 1906. Furthermore, these maps show how trust land for individual American Indians declined over the last century, being replaced by private fee simple land or tribal/band trust land.

The Grand Portage group was able to digitally recreate a map of culturally and historically important trails and sites from various pre-allotment and post-allotment maps. Having these digitized historical features will help the reservation create their own map of the names, uses, and stories of the landscape. The Band is beginning an educational program in the area's schools that will show all this cultural information (trails, buildings, etc.) on maps to help kids learn about their heritage.

FUTURE DIRECTIONS

There are several future directions for research utilizing or enhancing this database. First and foremost, we hope the tribes in Minnesota see this database as a useful resource and will work with the ILTF to broaden its scope. Additionally, more information is needed from local governments and tribes to document detailed ownership information. While current land tenure maps are useful, there still remain many opportunities create maps that document the history of allotment and land loss on reservations over the last century. Finally, future research might assess the spatial patterns of land tenure and the influence on other socio-economic variables, as well as ways of identifying land for reacquisition and strategies for improving current land management.

REFERENCES

- ArcGIS Resource Center. 2010. "GIS Dictionary." Accessed November 2010.
<http://resources.arcgis.com/glossary>.
- Babylon. 2007. "Platt map." Last modified 2007.
http://www.babylon.com/definition/PLAT_MAP/.
- Bizhibayaash Circle of Flight. 2005. "Tribal Wetland & Waterfowl Enhancement Initiative January 2005" CAME FROM WHERE???
- Bois Forte Band of Chippewa. 2010. "History." Accessed November 19, 2010.
<http://www.boisforte.com/history.htm>
- Brett Larson. 2010. "Charges Raise Sovereignty Questions." Mille Lacs Messenger. March 23, 2010. Accessed December 2, 2010. <http://www.millelacsmessage.com/>.
- Brown, Lindsey. 2003. *Educational Attainment in Minnesota*. State Demographic Center.
<http://www.demography.state.mn.us/PopNotes/EducationalAttainment.pdf>
- Carlos E. Carpio, Michael K. Wohlgenant, and Tullaya Boonsaeng. 2008. The Demand for Agritourism in the United States, *Journal of Agricultural and Resource Economics* 33(2): 254-269.
- Cohen, Felix S., and Rennard Strickland. 1982. *Felix S. Cohen's Handbook of federal Indian law*. Charlottesville, VA: Michie.
- Deller, Steven C. et al. 2001. The Role of Amenities and Quality of Life in Rural Economic Growth, *American Journal of Agricultural Economics* 82(2): 352-365.
- Deloria, Vine, and David E. Wilkins. 1999. *Tribes, treaties, and constitutional tribulations*. Austin: University of Texas Press.
- Dowlin, Sheryl L. 1987. "The U.S.-Dakota (Sioux) Conflict: Reconciliation Communication 125 years later" (paper presented at commission on Peace Communication Program: Intercultural Perceptions of Peace and Conflict Resolution, SCA, Boston, MA, November 1987).
- Ebbott, Elizabeth, and Judith Rosenblatt. 1985. *Indians in Minnesota*. Minneapolis: University of Minnesota Press.
- Elizabeth Ebbott, and Judith Rosenblatt. 1985. *Indians in Minnesota*. Minneapolis, MN:

University of Minnesota Press.

Fon du Lac Band of Lake Superior Chippewa. 2010. Anishinaabeg History. Cloquet, MN. Date Accessed: Fall 2010. <http://www.fdlrez.com/tribalhistory.htm>.

Fond du Lac Band of the Lake Superior Chippewa. 2010. Fond du Lac Band of Lake Superior Chippewa Home. Cloquet, MN. Date Accessed: Fall 2010. <http://www.fdlrez.com/>.

Fond du Lac Resource Management. 2008. 2008 Integrated Resource Management Plan. Cloquet, MN. Date Accessed: Fall 2010. <http://www.fdlrez.com/newnr/IRMP.pdf>

Gazel, Ricardo. 1998. The Economic Impacts of Casino Gambling at the State and Local Levels. *Annals of the American Academy of Political and Social Science* 556 March: 66-84.

Holmquist, June Drenning, and Jean A. Brookins. 1972. "Lower and Upper Sioux Agencies." In *Minnesota's Major Historic Sites A Guide*. St. Paul, Minnesota: Minnesota Historical Society.

Huff, David L. 1964. "Defining and Estimating a Trade Area," *Journal of Marketing*, 28(July): 34-38.

Indian Affairs Council. 2010. "Tribal Nations-Bois Forte." St. Paul, MN. Date Accessed November 19, 2010. http://www.indianaffairs.state.mn.us/tribes_boisforte.html.

Indian Affairs Council. 2010. "Tribal Nations-Grand Portage." Accessed November 19, 2010. http://www.indianaffairs.state.mn.us/tribes_grandportage.html

Indian Affairs Council. 2010. "Tribal Nations- Lower Sioux." St. Paul, MN. Date Accessed November 20, 2010. http://www.indianaffairs.state.mn.us/tribes_lowersioux.html.

Indian Affairs Council. 2010. "Tribal Nations-Prairie Island." St. Paul, MN. Date Accessed November 20, 2010. http://www.indianaffairs.state.mn.us/tribes_prairieisland.html. Accessed November 15, 2010.

Indian Affairs Council. 2010. "Tribal Nations- Upper Sioux." St. Paul, MN. Date Accessed November 20, 2010. http://www.indianaffairs.state.mn.us/tribes_uppersioux.html.

Indian Affairs Council. "Tribal Nations- Shakopee." St. Paul, MN. Date Accessed November 15, 2010. http://www.indianaffairs.state.mn.us/tribes_shakopee.html.

Indian Affairs Council. 2010. "Tribal Nations-White Earth" St. Paul, MN. Date Accessed October 2010. http://www.indianaffairs.state.mn.us/tribes_whiteearth.html.

- Indian Land Tenure Foundation. 2002. "About Us". Last Accessed 2 Dec 2010.
<http://www.iltf.org/about-us>.
- Indian Land Tenure Foundation. 2002. "Land Definitions," *The Message Runner*, November 2002, 3.
- Indian Land Tenure Foundation. 2010. "Land Issues." Accessed November 2010.
<http://www.iltf.org/land-issues>.
- Indian Land Tenure Foundation (ILTF) and The Grand Portage Band of Lake Superior Chippewa Tribal Council. 2006. "The Grand Portage Land History Information System."
- Indian Land Tenure Foundation. 2010. History of Allotment. Little Canada, MN. Date Accessed: Fall 2010
<http://www.iltf.org/resources/land-tenure-history/allotment>.
- Indian Land Tenure Foundation (ILTF). 2009. "The Allotment Era," *The Message Runner*, Fall 2009, 7.
- Indian Land Tenure Foundation. 2002. *Message Runner*. Vol. 1
- Indian Land Tenure Foundation. 2009. *Message Runner*. Vol. 4
- Johnson, Kenneth M. Nucci, Alfred. Long, Larry. 2005. Population trends in metropolitan and nonmetropolitan America: Selective deconcentration and the rural rebound" *Population Research and Policy Review* 24: 527-542.
- Kimmerling et al. 2009. *Map Use: Reading and Analysis*. Redlands: ESRI Press, 88-89.
- Konnie LeMay, 2010. "Ogechie Lake Wild Rice Restoration Moves Forward." *Indian Country Today*. June 17, 2010. Accessed December 2, 2010.
<http://www.indiancountrytoday.com/living/96386119.html>.
- Krugman, Paul. 1993. "First Nature, Second Nature, and Metropolitan Location." *Journal of Regional Science* 33(2): 129.
- Larry Oakes, 2004. "A murtherous rage: The story of Darryl Headbird and Sierra Goodman." *Star Tribune*, April 25, 2004, accessed December 2, 2010,
http://www.startribune.com/templates/Print_This_Story?sid=11578761.
- Leech Lake Band of the Ojibwe. 2010. "History." Accessed November 19, 2010.
<http://www.llojibwe.org/subnav/history.html>.
- Lien, Dennis. 2000. "Indians regain land," *St. Paul Pioneer Press*, December 14, 2000.
- Lower Sioux Indian Community. 2010. Our Culture - the Lower Sioux Community. Morton,

- MN. Date Accessed: November 30, 2010.
<http://www.jackpotjunction.com/culture/index.html>.
- McCarthy, James. 2008. Rural geography: globalizing the countryside. *Progress in Human Geography* 32(1): 129-137.
- McGranahan, David A. 2003. "How people make a living in Rural America", In *Challenges for Rural America in the Twenty-First Century* Eds. David Brown and Louis Swanson. pgs 135-151.
- Merriam-Webster Online Dictionary. 2010. "Tenure." Last modified 2010.
<http://www.merriam-webster.com/>.
- Mille Lacs Band of Ojibwe. 2010. "Mille Lacs Band of Ojibwe." Accessed December 2, 2010.
<http://www.millelacsband.com/>.
- Minnesota Chippewa Tribe. 2010. "The Minnesota Chippewa Tribe: A Brief History." Accessed October 2010. http://www.mnchippewatribe.org/a_brief_history.htm.
- Minnesota Department of Natural Resources [a]. 2010. Biomes of Minnesota: Minnesota DNR. St. Paul, MN. Date Accessed: November 18, 2010.
<http://www.dnr.state.mn.us/biomes/index.html>.
- Minnesota Department of Natural Resources [b]. 2010. Prairie Grassland - Biomes of Minnesota: Minnesota DNR. Date Accessed: November 18, 2010.
<http://www.dnr.state.mn.us/biomes/prairie.html>.
- Minnesota Department of Natural Resources. 2010. "Park Info: Grand Portage State Park." Accessed November 19, 2010.
http://www.dnr.state.mn.us/state_parks/grand_portage/narrative.html
- Minnesota Department of Natural Resources. 2010. "The Real Story of the Chippewa National Forest." Accessed November 19, 2010.
<http://www.dnr.state.mn.us/volunteer/novdec04/chippewanf.html>.
- Minnesota Senate. 2010. "American Indian Communities in Minnesota Definitions." Accessed November 2010.
<http://www.senate.leg.state.mn.us/departments/scr/report/bands/DEFINITION.HTM>.
- National Indian Gaming Association. 2010. "Library." Accessed November 19, 2010.
<http://www.indiangaming.org/library/articles/where-does-policy-come-from.shtml>.
- National Park Service. 2010. "Grand Portage National Monument Heritage Center."

Accessed November 19, 2010. <http://www.nps.gov/grpo/planyourvisit/grand-portage-national-monument-heritage-center.htm>.

Native American Indian Resources. 2010. "Treaties with Minnesota Indians," Accessed Dec 2, 2010. <http://www.kstrom.net/isk/maps/mn/treaties.html>.

Prairie Island Indian Community. 2010. "Buffalo."
http://www.prairieisland.org/buffalo_herd%20on%20HOME.htm. Accessed November 15 2010.

Prairie Island Indian Community. 2010. "History."
<http://www.prairieisland.org/History.htm>.
Accessed November 15, 2010.

Ranjana G. Madhusudhan. 1996. Betting on Casino Revenues: Lessons From State Experiences, *National Tax Journal* 49(3): 401-12.

Shakopee Mdewakanton Sioux Community. 2009. "Donations Report 2009."
<http://www.shakopeedakota.org/flash/donationrpt09/booklet.html>. Accessed November 2010.

Shakopee Mdewakanton Sioux Community. 2010. <http://www.shakopeedakota.org>.
Accessed November 15, 2010.

Smith, Laura. 2004. "American Indian Trust Lands in Minnesota: The Economic Impacts of Geography and Law" (unpublished PhD diss., University of Minnesota, 2004).

The Associated Press. 1987. "Indian Incident in 1862 Still Stirs Deep Emotion," *New York Times*, December 26, 1987. Date Accessed: Fall 2010,
<http://www.nytimes.com/1987/12/26/us/indian-incident-in-1862-still-stirs-deep-emotion.html>.

Minnesota Public Radio (MPR). 2009. "Judge rules White Earth casino not subject to taxes," *MPR*.
<http://minnesota.publicradio.org/display/web/2009/04/13/whiteearth/>.

The Harvard Project on American Indian Economic Development. 2008. *The State of the Native Nations*. New York: Oxford University Press.,96.

National Atlas. 2010. "Map Layer Info." Accessed September 24, 2010. <http://www.nationalatlas.gov/mld/plss00p.html>

Treuer, Anton. 2010. *Ojibwe in Minnesota*. St. Paul, MN: Minnesota Historical Society Press.

Trygg Land Office. 2010. "Maps." Accessed November 19, 2010.

<http://www.trygglandoffice.com/maps.html>

United States Department of Agriculture. 2010. "Chippewa National Forest." Accessed November 19, 2010. <http://www.fs.usda.gov/wps/portal/>.

United States Department of Natural Resources. 2010. "Park Info: Mille Lacs Kathio State Park." Minnesota.
http://www.dnr.state.mn.us/state_parks/mille_lacs_kathio/narrative.html.
Accessed December 2, 2010.

Upper Sioux Community Meth Committee. 2010. Don't Meth With Us! The USC Meth Committee. Granite Falls, MN. Date Accessed: November 18th, 2010.
http://www.upperSiouxcommunity-nsn.gov/pages/Meth_story.htm.

U.S. Bureau of the Census. 2000. "Glossary" Washington D.C.: US Department of Commerce. Fall 2010.

U.S. Census Bureau Geography Division. 2009. Census 2000, Urban and Rural Classification. Washington, DC. Date Accessed November 18, 2010.
http://www.census.gov/geo/www/ua/ua_2k.html.

U.S. Census Bureau. 2008. Population Density 2000. Washington, DC. Date Accessed November 18, 2010.
<http://www.census.gov/population/www/censusdata/maps/density1.jpg>.

U.S. Census Bureau. 2000. Minnesota by Place and County Subdivision. Washington, DC. Date Accessed: November 18, 2010. <http://factfinder.census.gov/>.

U.S. Department of the Interior. 2010. "Who We Are." Indian Affairs. Last Modified December 2, 2010. <http://www.bia.gov/WhoWeAre/index.htm>.

Waziyawatin. 2008. *What does justice look like?: the struggle for liberation in Dakota homeland*. St. Paul, MN: Living Justice Press.

Wilkins, David E. 2002. *American Indian politics and the American political system*. The spectrum series, race and ethnicity in national and global politics. Lanham, MD: Rowman & Littlefield.

White Earth Tribal Council. 2010. "White Earth Tribal Council Land Office." Accessed October 2010. <http://www.whiteearth.com/naturalresources.htm>.

Yellow Medicine County. 2010. Yellow Medicine County -- History of Yellow Medicine County. Granite Falls, MN. Date Accessed: November 18, 2010.
<http://yellowmedicine.govoffice.com/>.

1854 Treaty Authority. 2010. 1984 Treaty Organization. Duluth, MN.

<http://www.1854treatyauthority.org/about/history.htm> Date Accessed: November 19, 2010.

DATA SOURCES:

- Beltrami County GIS Office. 2010. Beltrami County parcel data shapefile. Beltrami County. Received October 2010.
- Cain, Leech Lake Tribal Member. 2010. Indian Trust Land Data excel file. Leech Lake Band of Ojibwe. Received November 2010.
- County Office of Mille Lacs. 2007 illustrations. Mille Lacs County Plat Maps. Pages 40-50.
- ESRI: The GIS Software Leader. 2010. Mapping Software and Data. Redlands, California. <http://www.esri.com/>. Accessed November 2010.
- Explore Minnesota Tourism. April 2008. Explore Minnesota Tourism: Travel Information on Minnesota. St. Paul, MN. <http://www.exploreminnesota.com/>. Date Accessed: Fall 2010.
- Farm and Home Plat. 2008. Redwood County Plat Book. 48, 56.
- Farm and Home Plat. 2008. Yellow Medicine County Plat Book. 38.
- Fond du Lac Reservation GIS Office. 2010. Current Land Status Shapefile. Shapefile.. Fall 2010.
- Fond du Lac Reservation GIS Office. 2010. Fond du Lac Reservation Boundary Layer. Shapefile. Fall 2010.
- Fond du Lac Reservation GIS Office. 2010. Land Index Records. Paper, Electronic Records. Fall 2010.
- Fond du Lac Reservation GIS Office. 2010. PLSS. Shapefile. Fall 2010.
- GeoLytics, Inc. 2006 Estimates and 2011 Projections Dataset. <http://www.geolytics.com/>. Accessed on September 23, 2010.
- Goodhue County GIS Office. 2010. Parcel Data Shapefile. Goodhue County. Received November 2010.
- Hubbard County GIS Office. 2010. Hubbard County parcel data shapefile. Hubbard County. Received October 2010.
- Itasca County GIS Office. 2010. Itasca County parcel data shapefile. Itasca County. Received

November 2010.

- Land and Environment Department. 2010. Tribal Land Map. Prairie Island Indian Community. Received November 2010.
- Mahnomen County Auditor's Office. 1993. 1993 Land Tenure Map. Mahnomen County. Fall 2010.
- Management Information Systems GIS Department. 2010. Cass County parcel data shapefile. Cass County. Received October 2010.
- Metropolitan Council. 2010. MetroGIS. Saint Paul, MN. <http://www.metrogis.org/>. Accessed Fall 2010.
- Mille Lacs Band of Ojibwe Department of Real Estate. Mille Lacs County land parcel shapefiles. Mille Lacs County. Received October 2010.
- Minnesota Department of Natural Resources. 2010. Data Deli. St. Paul, MN. <http://deli.dnr.state.mn.us/>. Accessed Fall 2010.
- Minnesota Department of Transportation. 2010. Minnesota Statewide Transportation Data. St. Paul, MN. <http://www.dot.state.mn.us/maps/gisbase/html/statewide.html>. Accessed Fall 2010.
- Minnesota Geospatial Information Office. "Original Public Land Survey Plat Maps of Minnesota." Accessed November 19, 2010. <http://www.mngeo.state.mn.us/glo/index.html>
- Scott County Assessor's Office. May 2009. Land Tenure Map. Scott County. Received October 2010.
- Trust Lands GIS Lab. 2010. Reservation boundary shapefile. Grand Portage Band of Lake Superior Chippewa. October 2010.
- Upper Sioux Indian Community. 2007. Upper Sioux Community Boundary Layer Shapefile. Received Fall 2010.
- US Bureau of the Census. 1990. "1990 Census of Population." Washington D.C.: US Department of Commerce. October 2010.
- US Bureau of the Census. Census 2000. "2000 Census of Population." Washington D.C.: US Department of Commerce. <http://factfinder.census.gov/>. Accessed November 2010.
- US Department of Labor. 2000. "Labor Statistics." Washington, D.C.: US Department of Labor. October 2010.

White Earth Public Transportation. "White Earth Public Transit Routes, October 2007."
<http://www.whiteearth.com/transiting/Schedule.pdf>.

Trygg, William J. *Composite Map of United States Land: Surveyor's Original Plats and Field Notes*. Ely, Minnesota: 1966.

Yellow Medicine County Zoning and Agricultural Office. 2007. Yellow Medicine County Parcel Layer. Shapefile. Fall 2010.