

Mapping Indian Land Tenure in Minnesota

Macalester College & Indian Land Tenure Foundation
Geography 364 and 365
Fall 2010

Presentation at the Federal Reserve Bank of Minneapolis
December 2, 2010



Why use GIS for land tenure analysis?

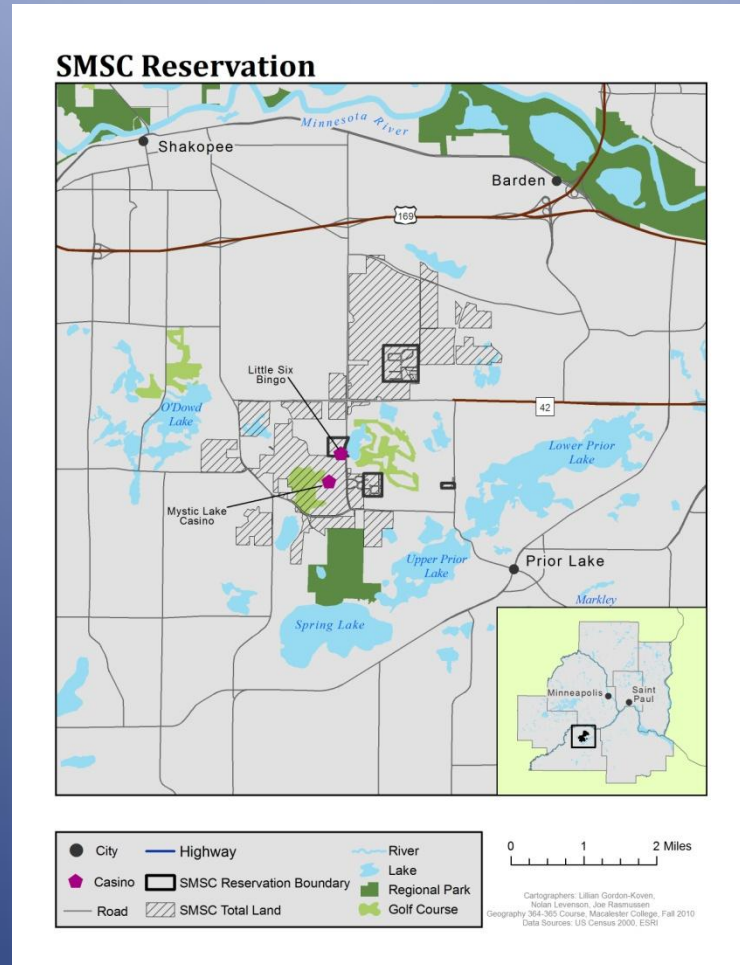
- Facilitating education
- Visualizing patterns of land tenure

Fall 2010 partnership with ILTF

- Civic engagement for GIS classes
- Land tenure data sources
 - Tribal land offices
 - County assessors
 - County plat books
 - County GIS offices

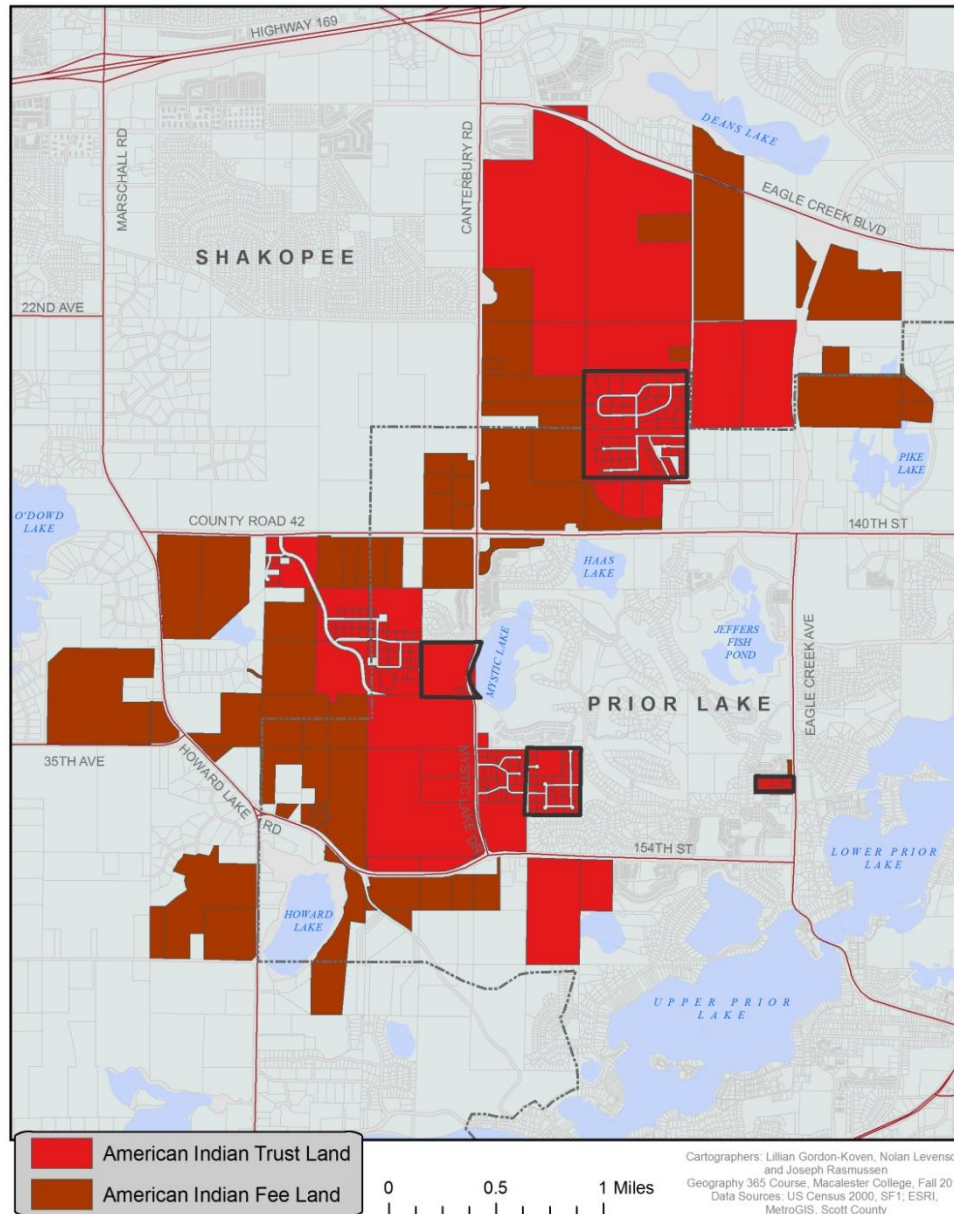


Shakopee Mdewakanton Sioux Community



Lillian Gordon-Koven, Nolan Levenson, Joe Rasmussen

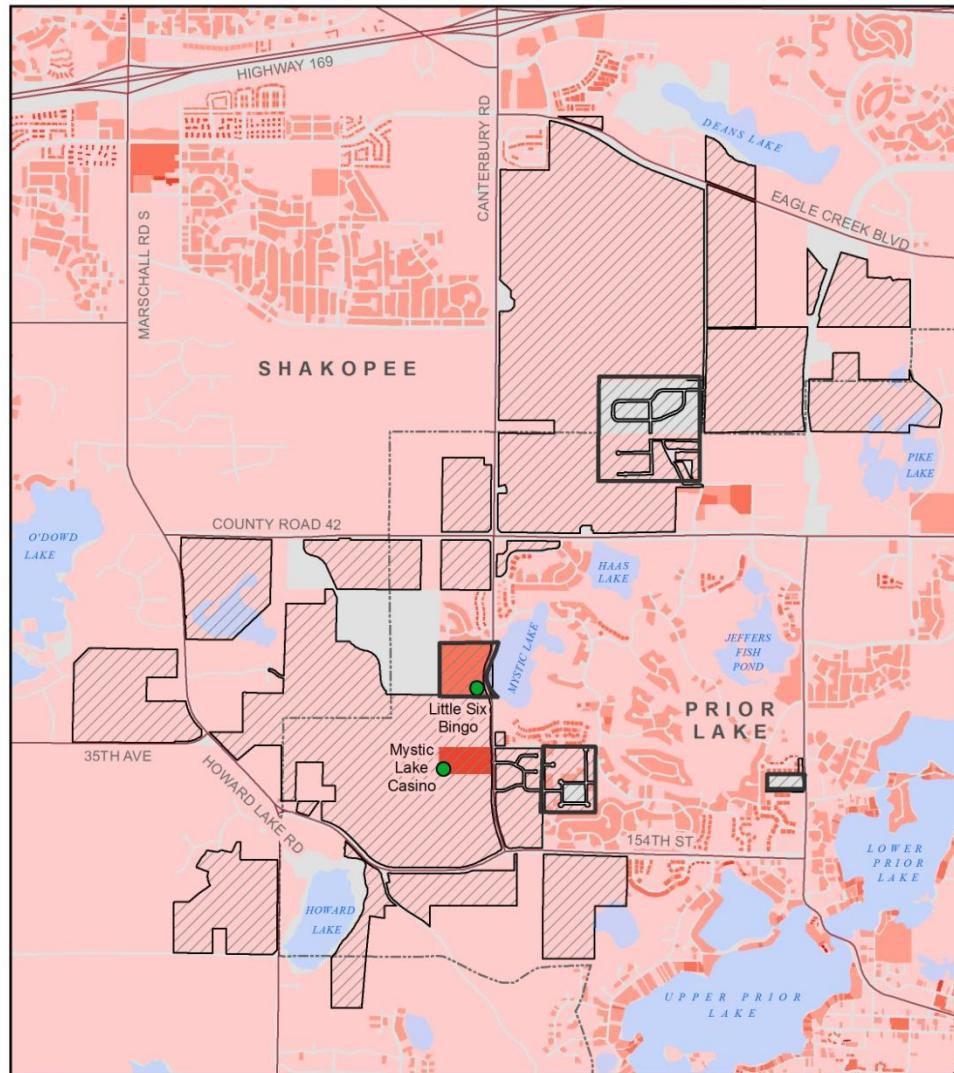
Land Tenure - SMSC



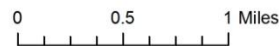
All lands within the reservation boundaries are SMSC owned and in trust.

SMSC owns a significant portion of the lands surrounding the reservation, about half of which are in trust.

Land Value - SMSC and Surrounding Area



| | | | |
|----------|------------------------------|--------------|-------------------------|
| Dark Red | \$10,700,000 - \$184,580,000 | Light Red | \$800,000 - \$2,250,000 |
| Red | \$5,700,000 - \$10,700,000 | Light Orange | 0 - \$800,000 |
| Orange | \$2,250,000 - \$5,700,000 | | |

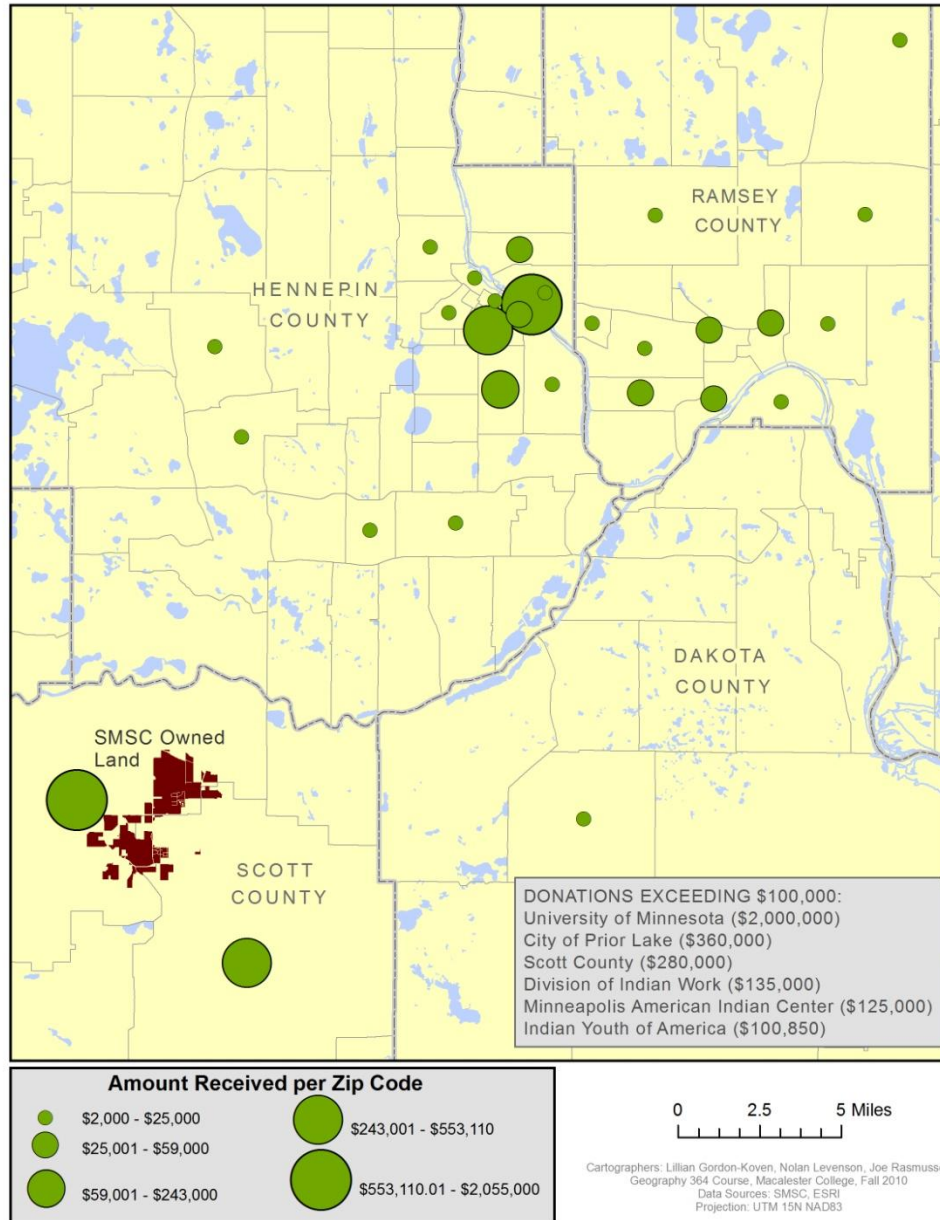


Cartographers: Lillian Gordon-Koven, Nolan Levenson, and Joseph Rasmussen
 Geography 365 Course, Macalester College, Fall 2010
 Data Sources: ESRI, MetroGIS, Scott County

The highest estimated land values in the area shown are in the residential, suburban areas of Shakopee and Prior Lake.

The highest estimated land values on SMSC owned lands are the commercial areas of Little Six Bingo and Mystic Lake Casino.

SMSC Donations: Twin Cities 2009



This map shows donations given by the SMSC to Twin Cities area organizations in 2009.

Organizations that received the highest donations and loans were medical and educational institutions and American Indian related-organizations.

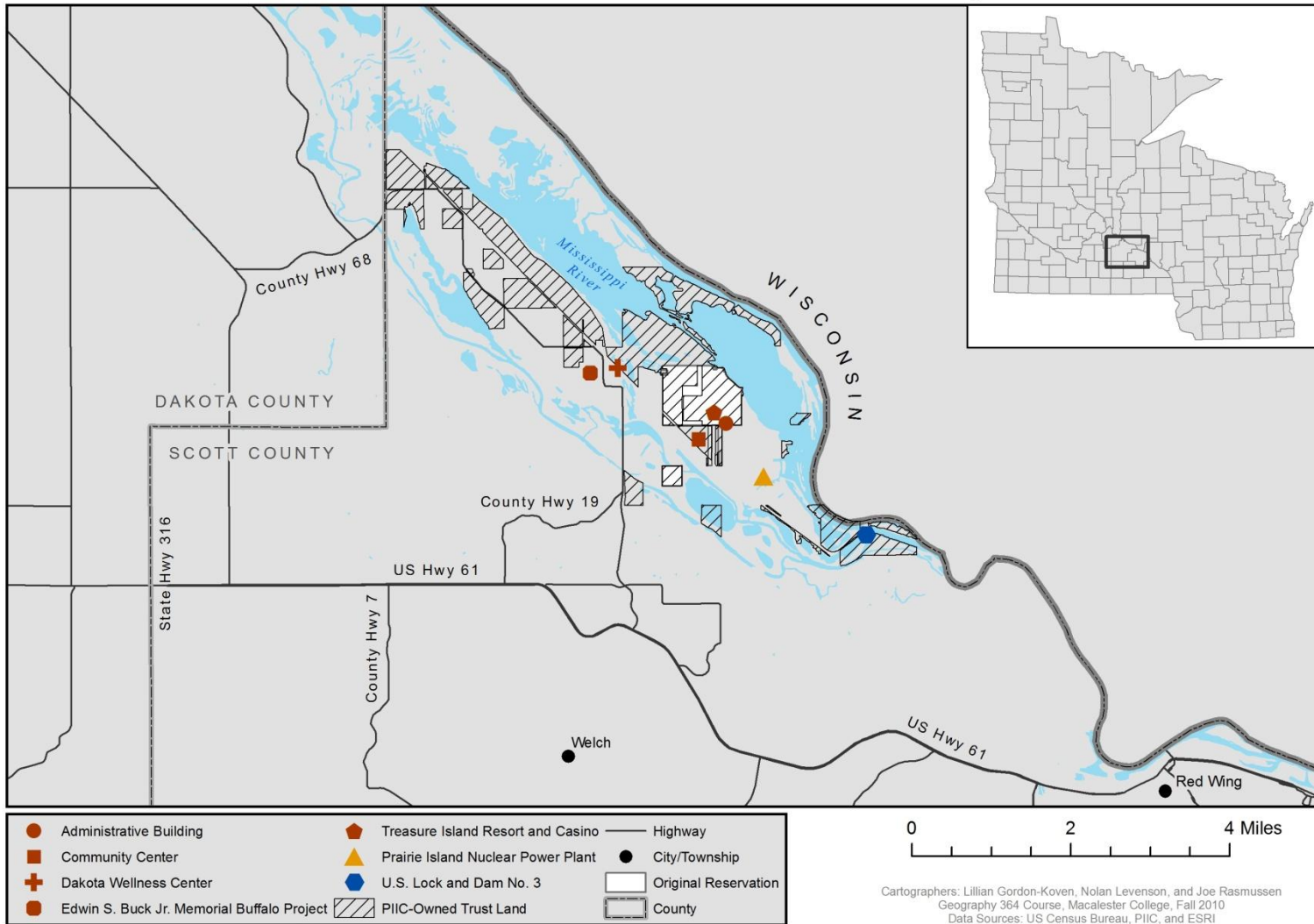
Overall, SMSC gave upwards of \$30 million in grants and \$129 million in economic development loans across the country.

Prairie Island Indian Community



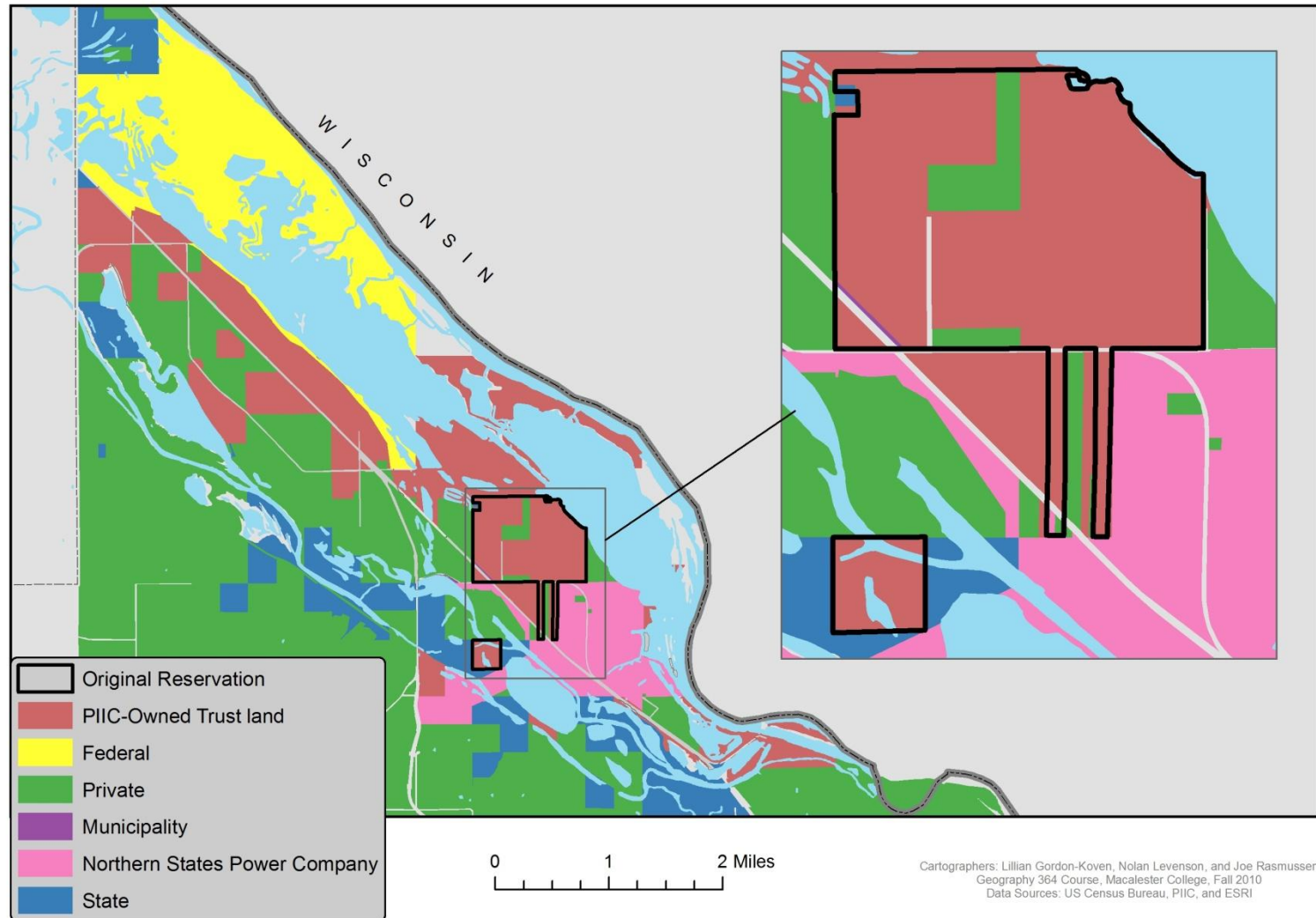
Lillian Gordon-Koven, Nolan Levenson, Joe Rasmussen

Prairie Island Indian Community



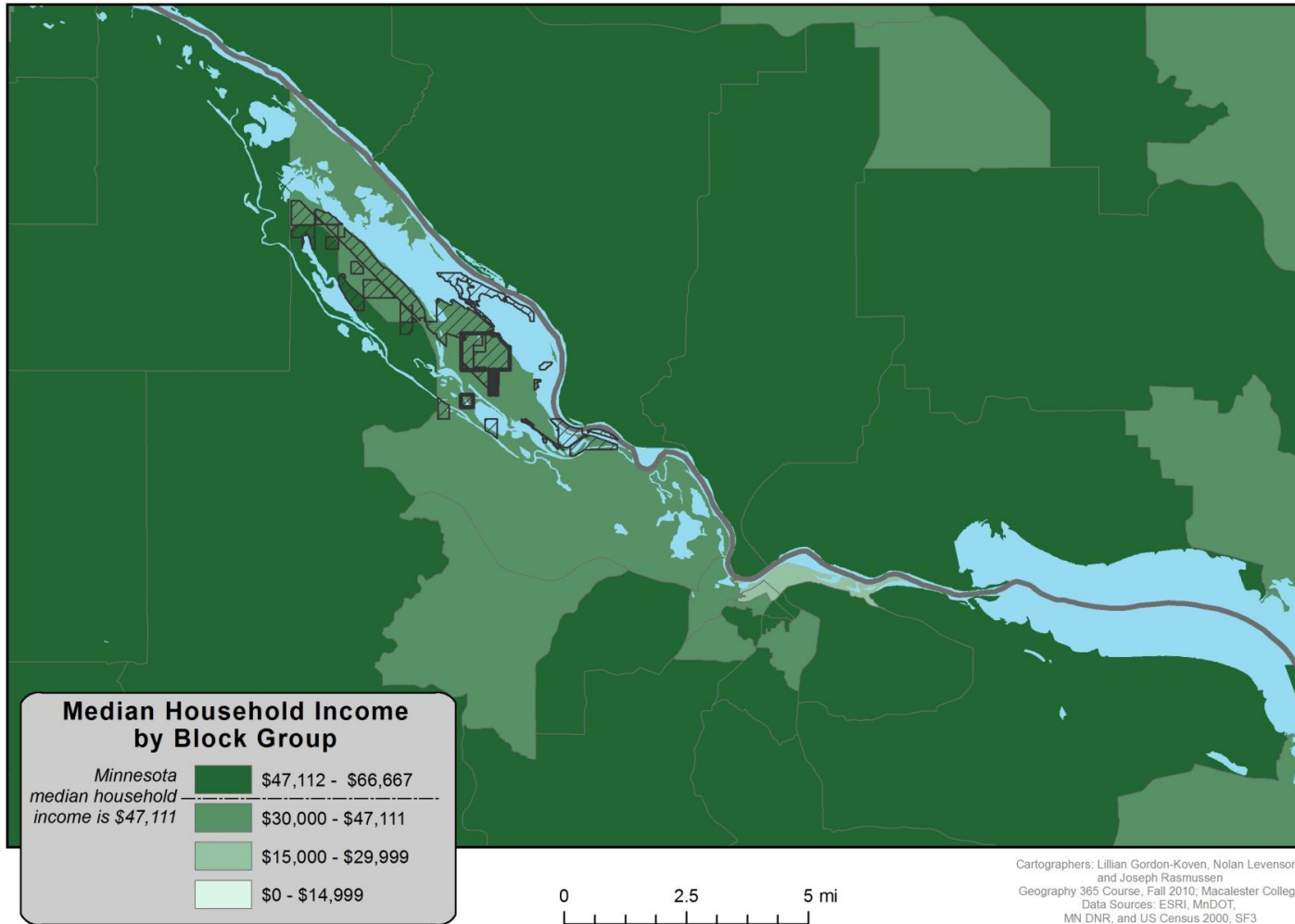
Key features of the landscape on and surrounding PIIC's reservation are the buffalo project and Treasure Island Resort and Casino.

Prairie Island Indian Community Tribal Land



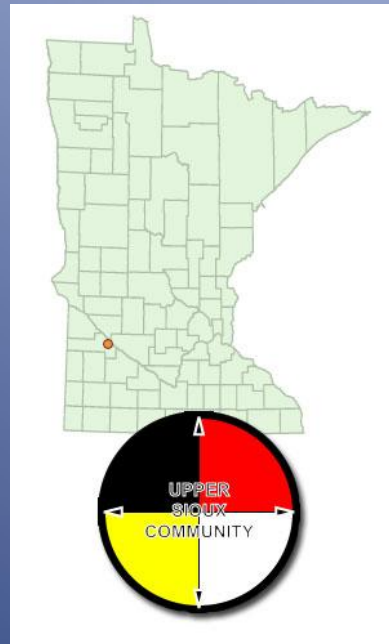
PIIC owns most of the land within the reservation boundaries and a significant portion of the adjacent land. Northern States Power and the state own land buffering the reservation.

Median Household Income - 1999



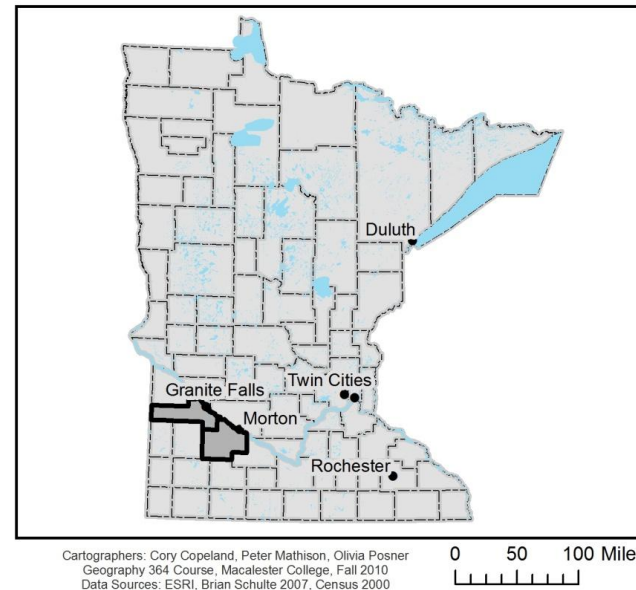
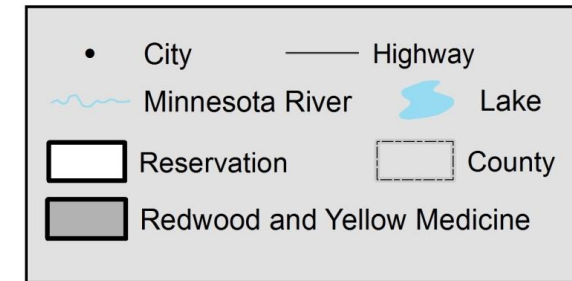
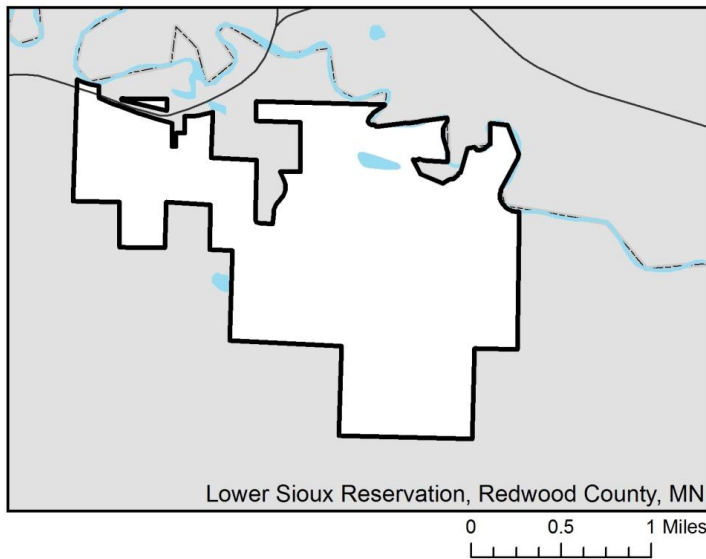
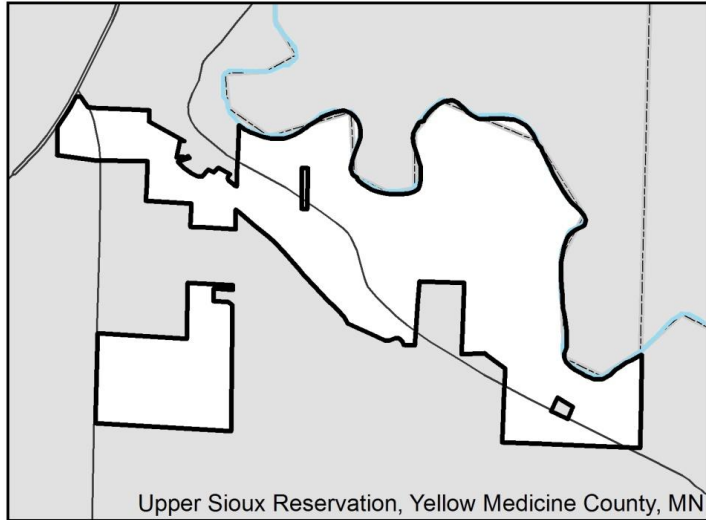
This map highlights the difference in income between PIIC tribal land and surrounding areas.

Upper Sioux & Lower Sioux Reservations



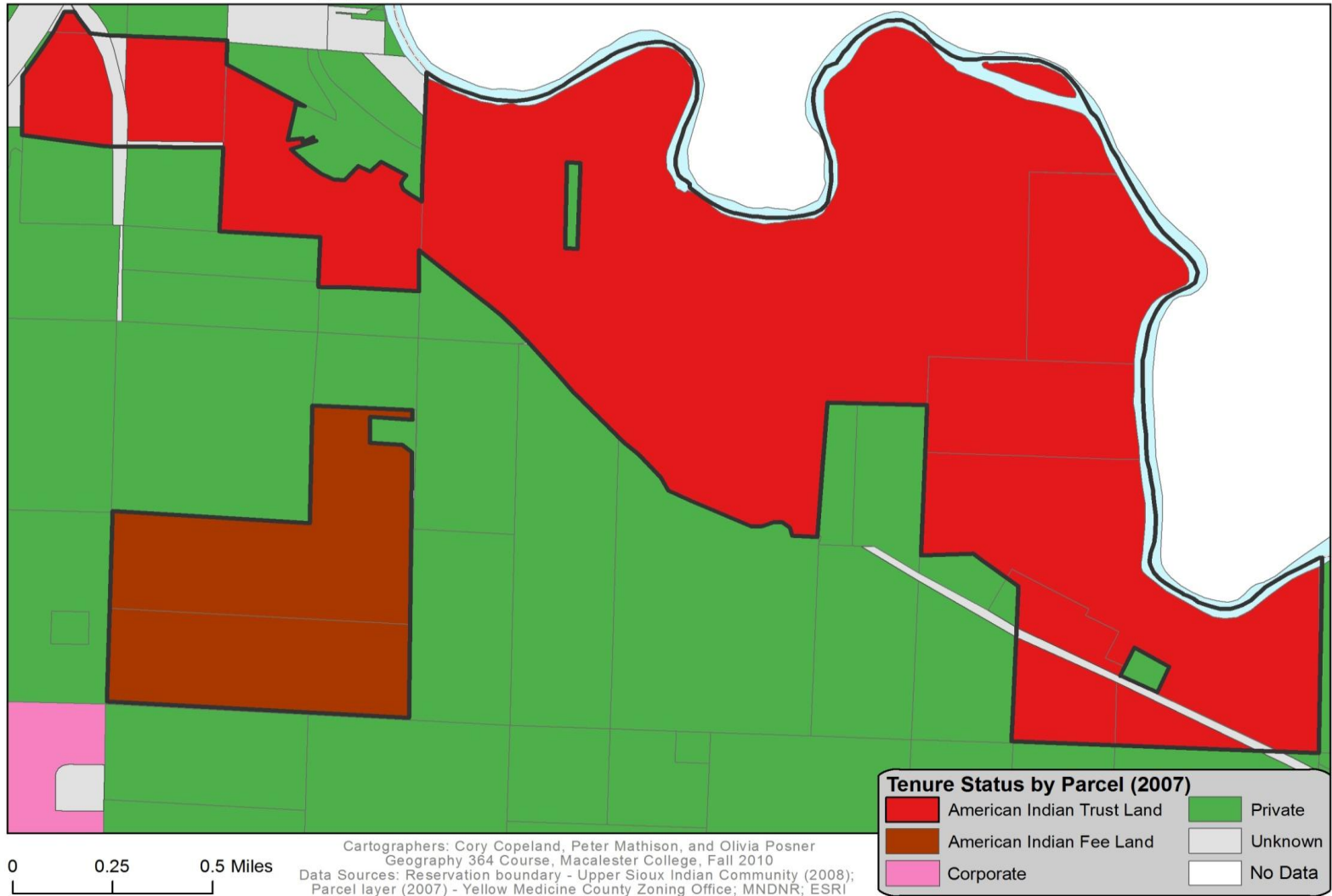
Cory Copeland, Peter Mathison, Olivia Posner

Upper and Lower Sioux Reservations in Yellow Medicine and Redwood Counties, MN



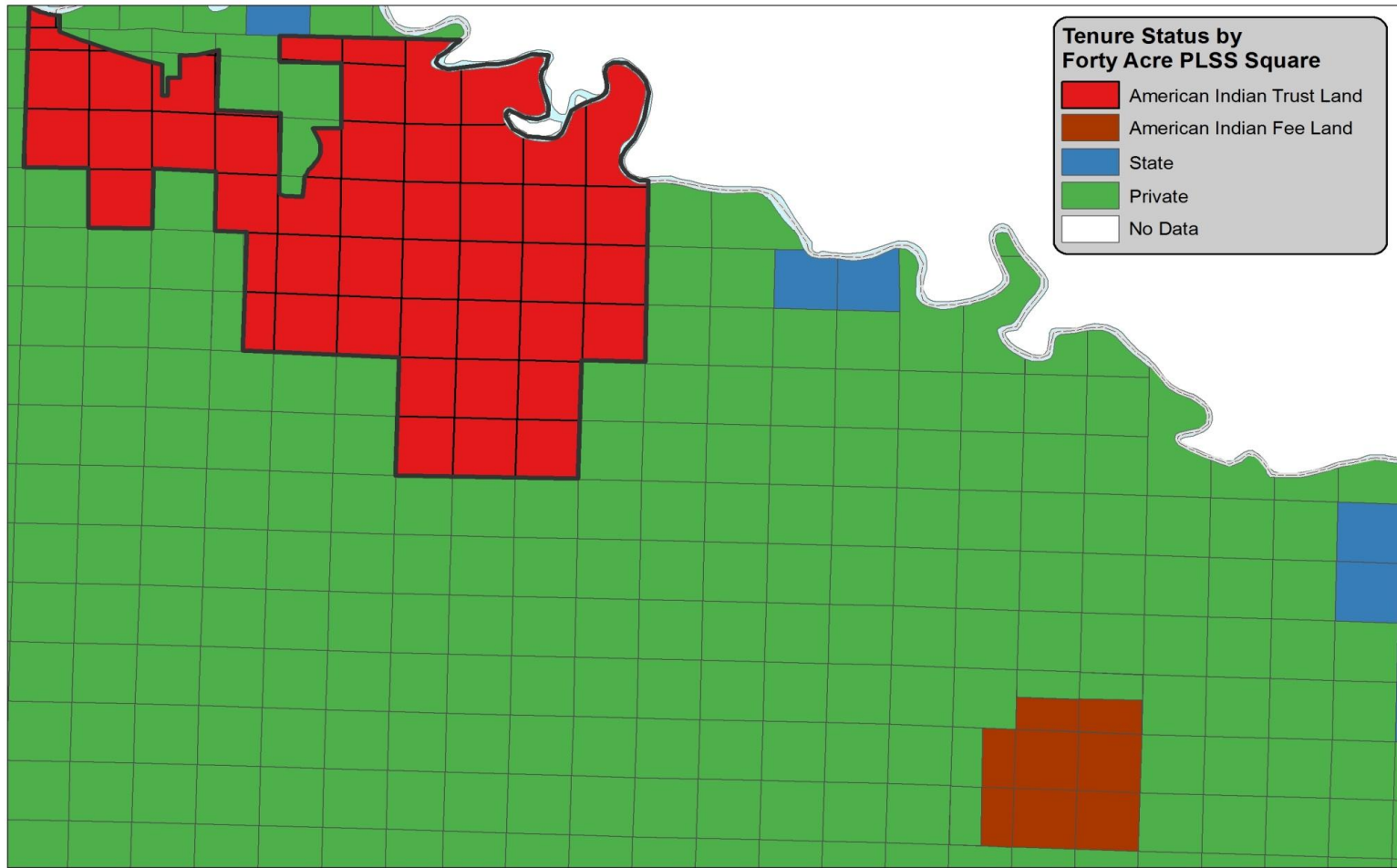
The Upper Sioux and Lower Sioux Reservations are located along the Minnesota River in southwest Minnesota.

Land Tenure - Upper Sioux Reservation



The majority of land within the Upper Sioux Reservation boundaries is held in trust.

Land Tenure - Lower Sioux Reservation

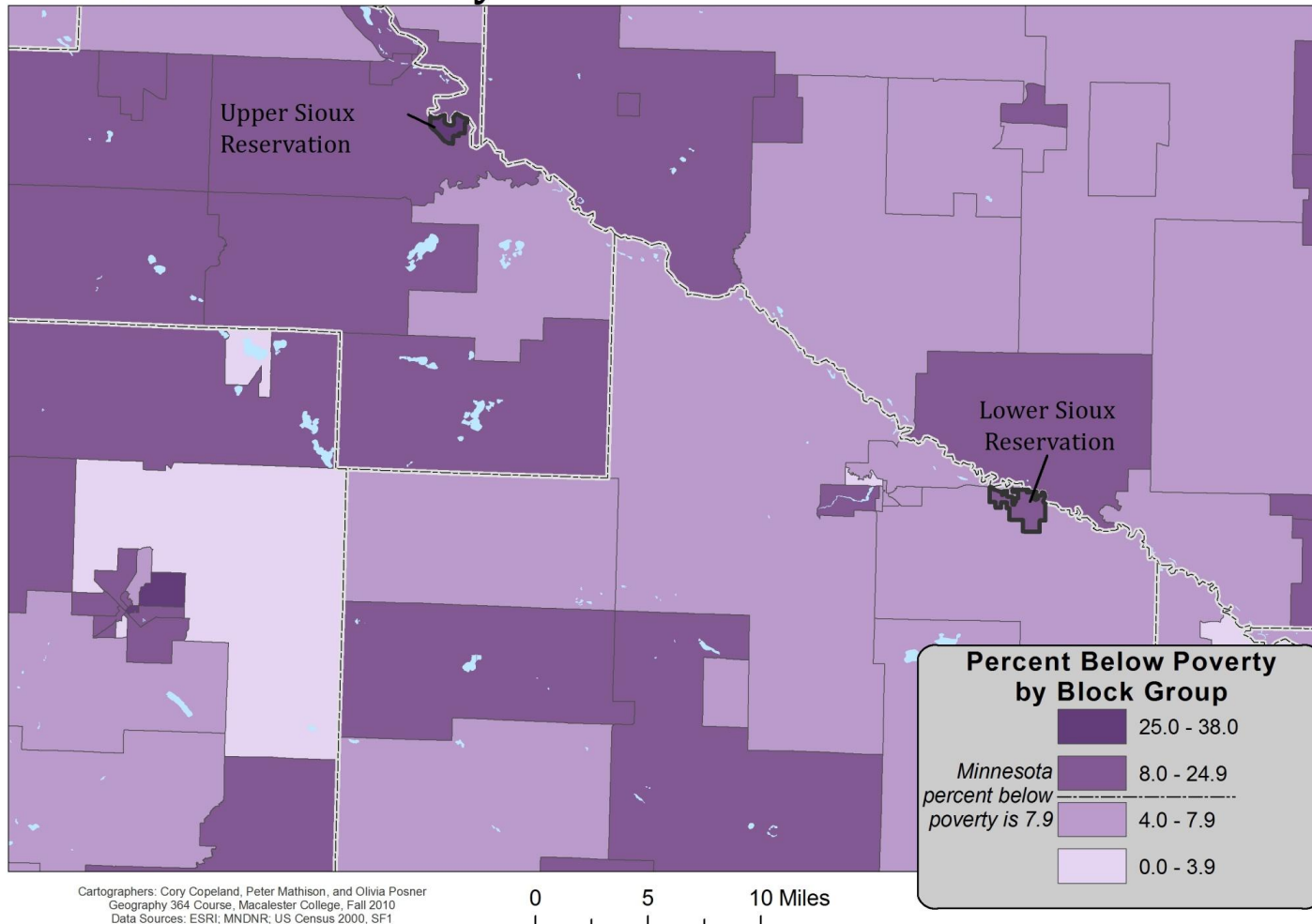


0 0.5 1 Miles

Cartographers: Cory Copeland, Peter Mathison, and Olivia Posner
Geography 364 Course, Macalester College, Fall 2010
Data Sources: PLSS layer (2008) - Bureau of Land Management; MNDNR; ESRI; US Census 2000, SF1

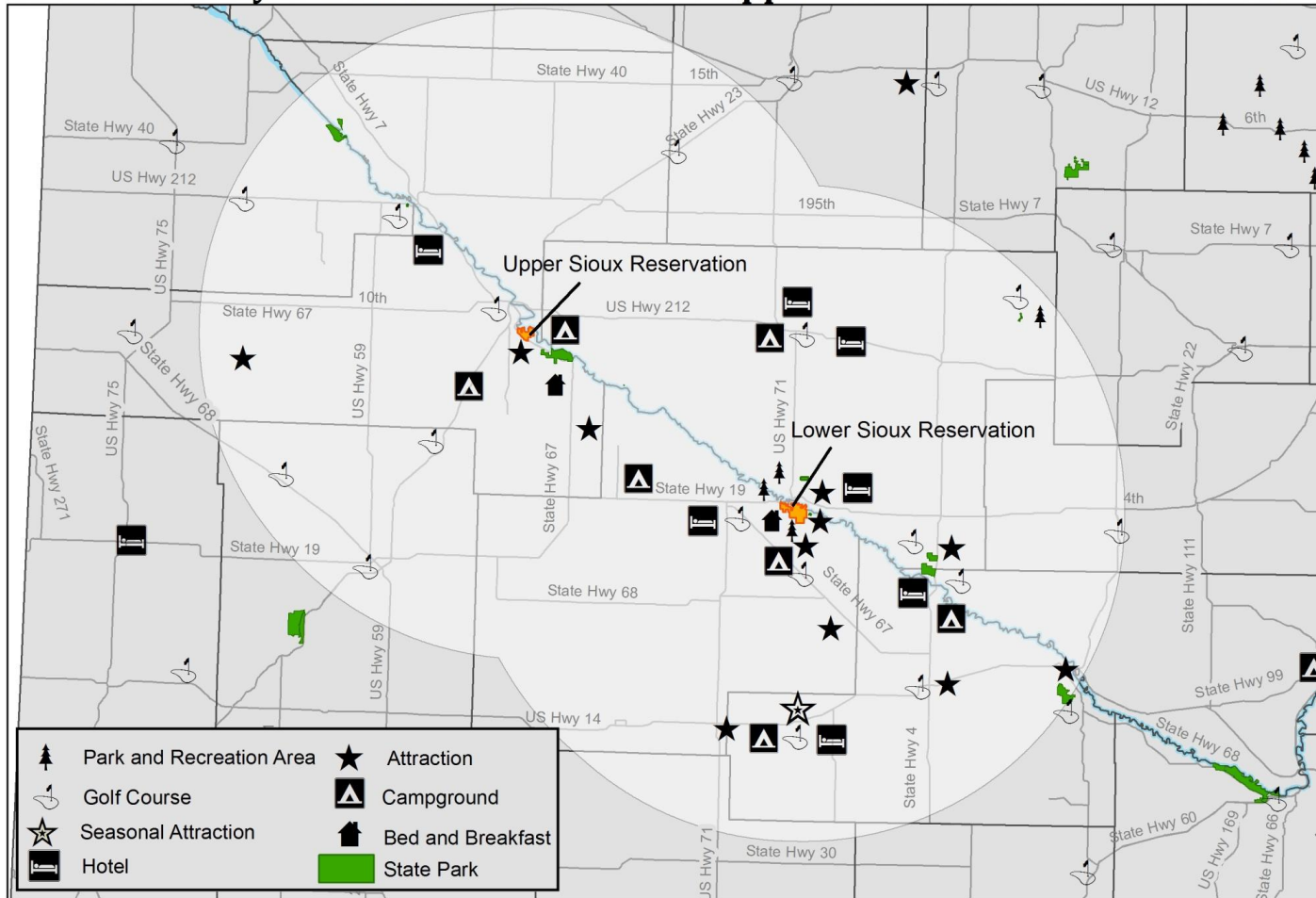
The majority of land within the Lower Sioux Reservation boundaries is held in trust.

Percent Below Poverty – 2000



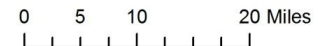
The reservations suffer from higher rates of poverty than Minnesota's average, and are among the highest in their region.

Tourist Industry Establishments Near* the Upper and Lower Sioux Reservations



* The buffer ring around the reservations is 30 miles

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



The Upper Sioux and Lower Sioux Communities could explore amenities tourism as a method of bringing new money into the communities.

Research Observations

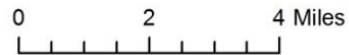
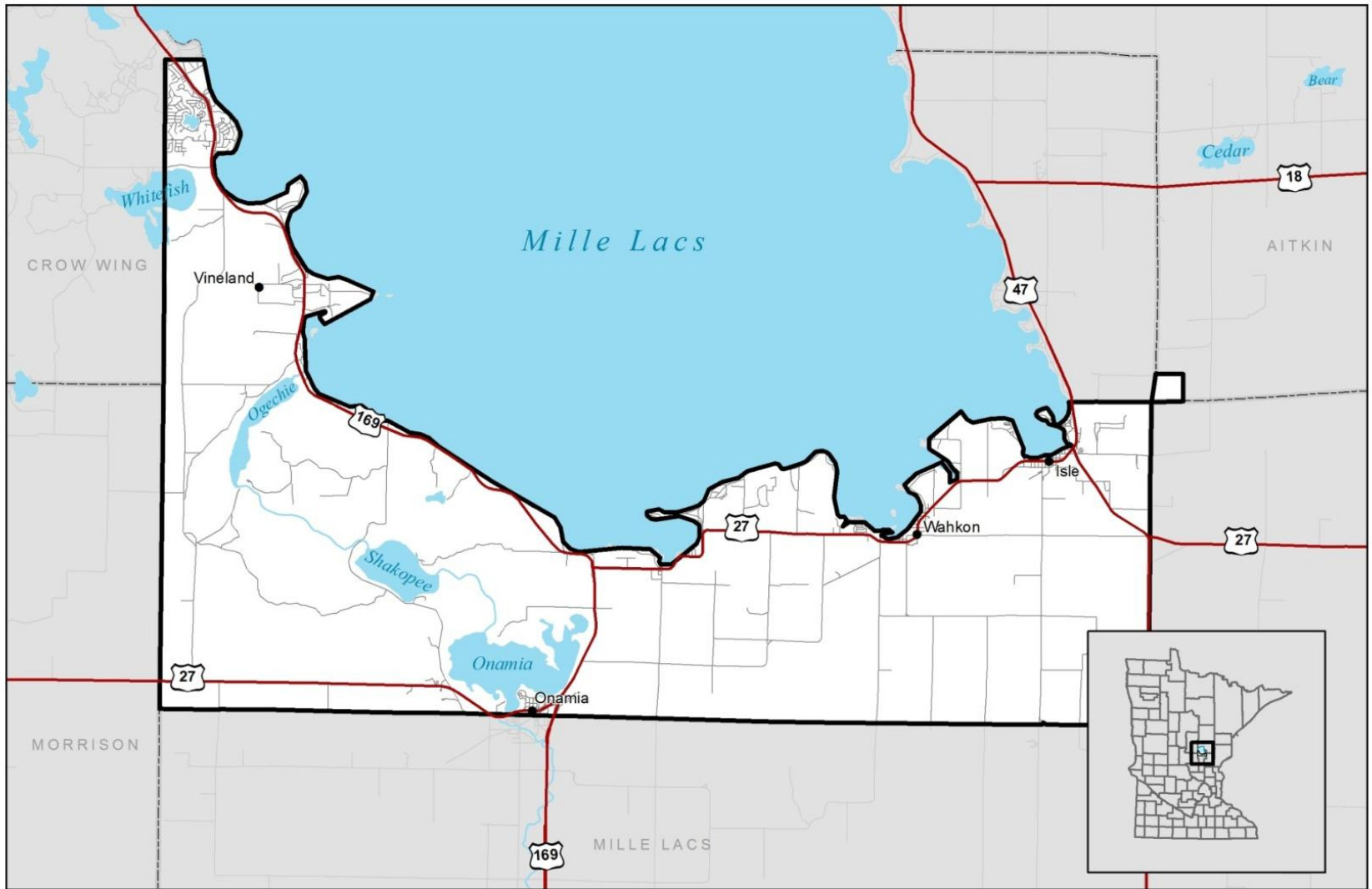
- After years of land loss through changes in reservation boundaries and forced migration, the limited remaining areas are in trust for the Upper Sioux and Lower Sioux Communities.
- Both reservations are experiencing high rates of poverty.
- Finding new sources of income for the reservations could help create a vibrant and diverse economic base.
- Natural amenities based tourism is a solution many rural communities have turned to and the reservations are situated well to develop a natural amenities tourism industry.
- Some specific options to explore include water based activities (e.g. fishing or canoeing), winter sports (e.g. cross-country skiing), and agro-tourism.

Mille Lacs Band of Ojibwe



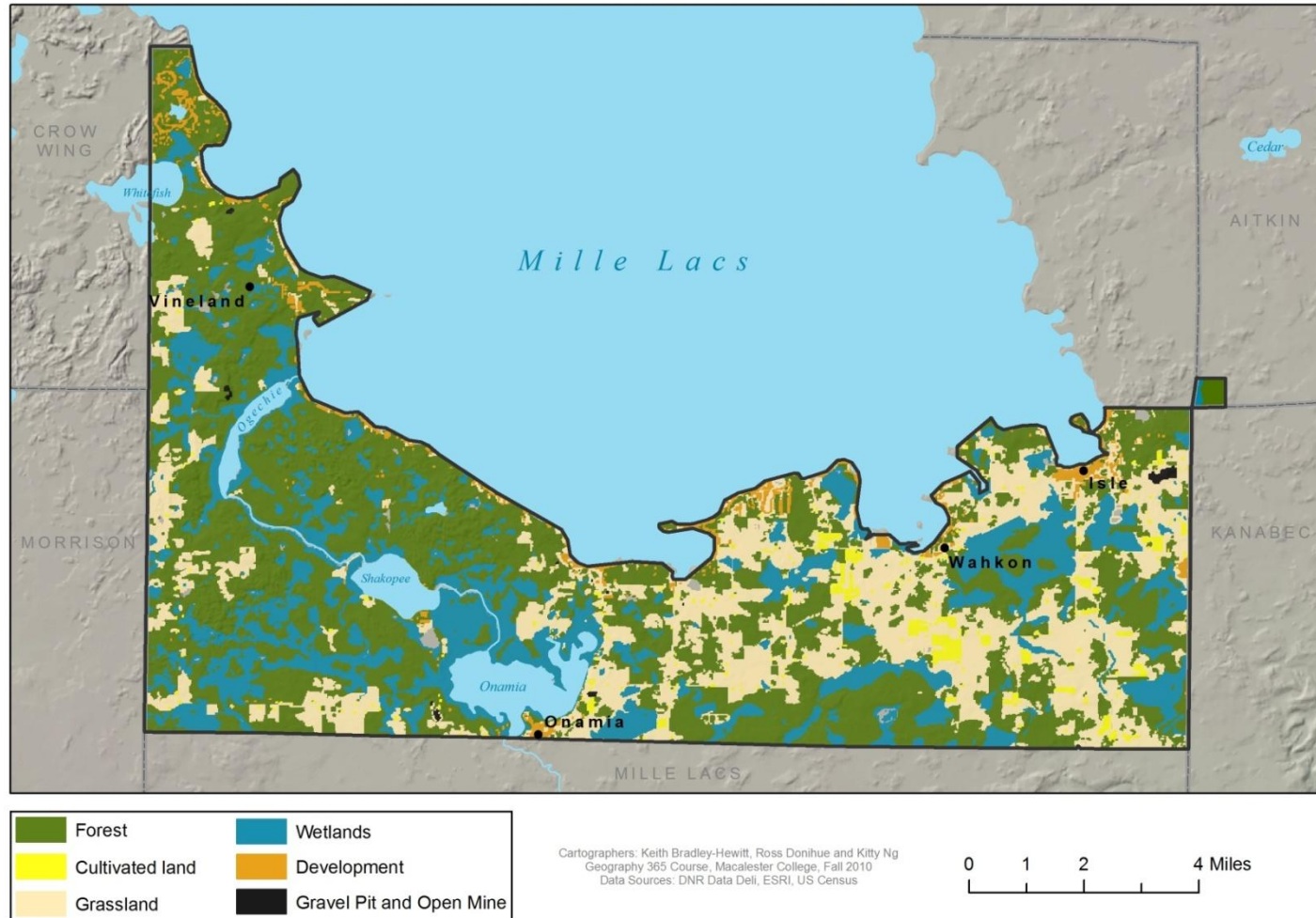
Keith Bradley-Hewitt, Ross Donihue, and Kitty Ng

Mille Lacs Reservation



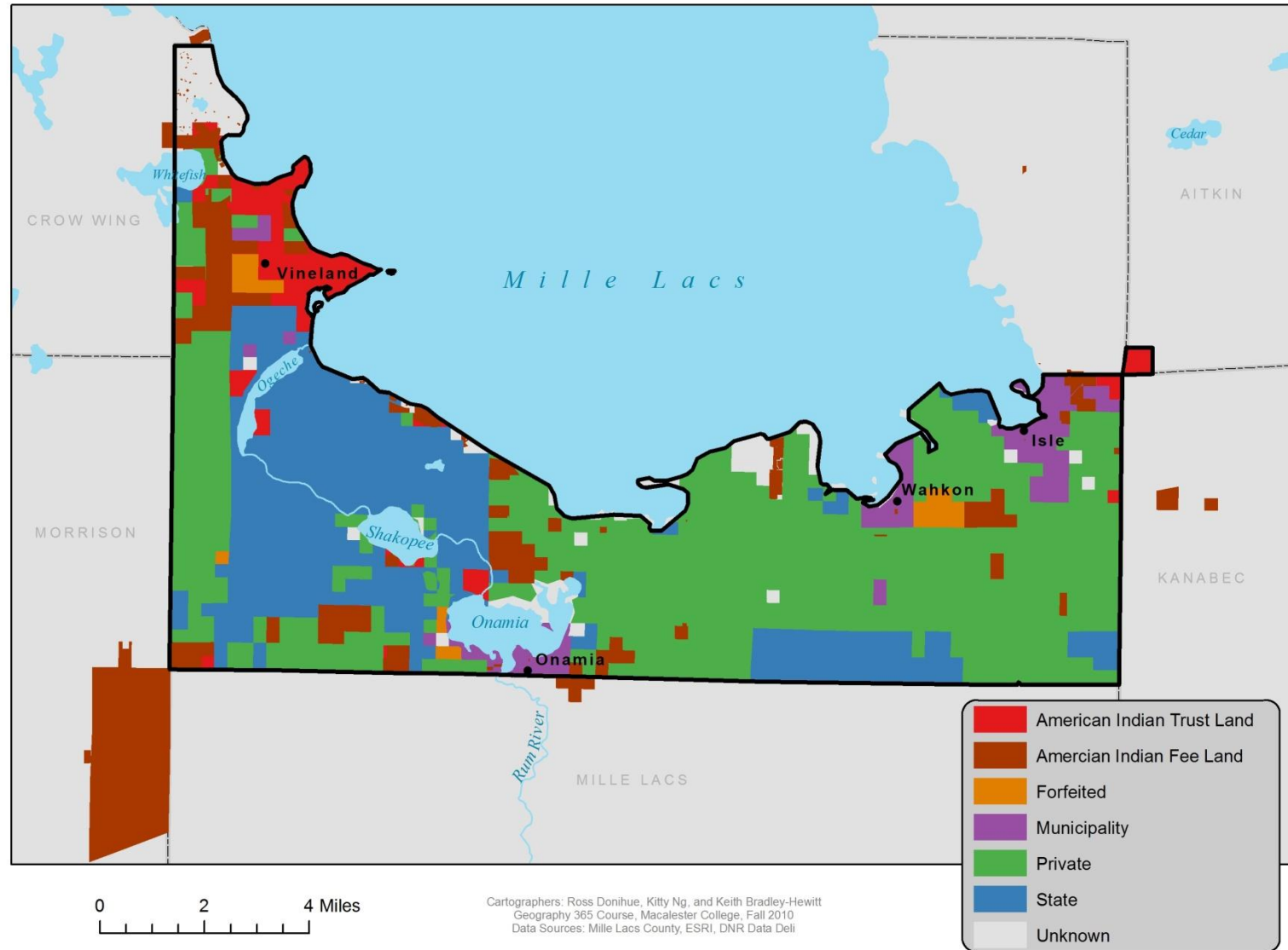
Cartographers: Ross Donihue, Kitty Ng, and Kieth Keith Bradley-Hewitt
 Geography 365 Course, Macalester College, Fall 2010
 Data Sources: ESRI, DNR Data Deli

Resource Distribution - Mille Lacs Reservation



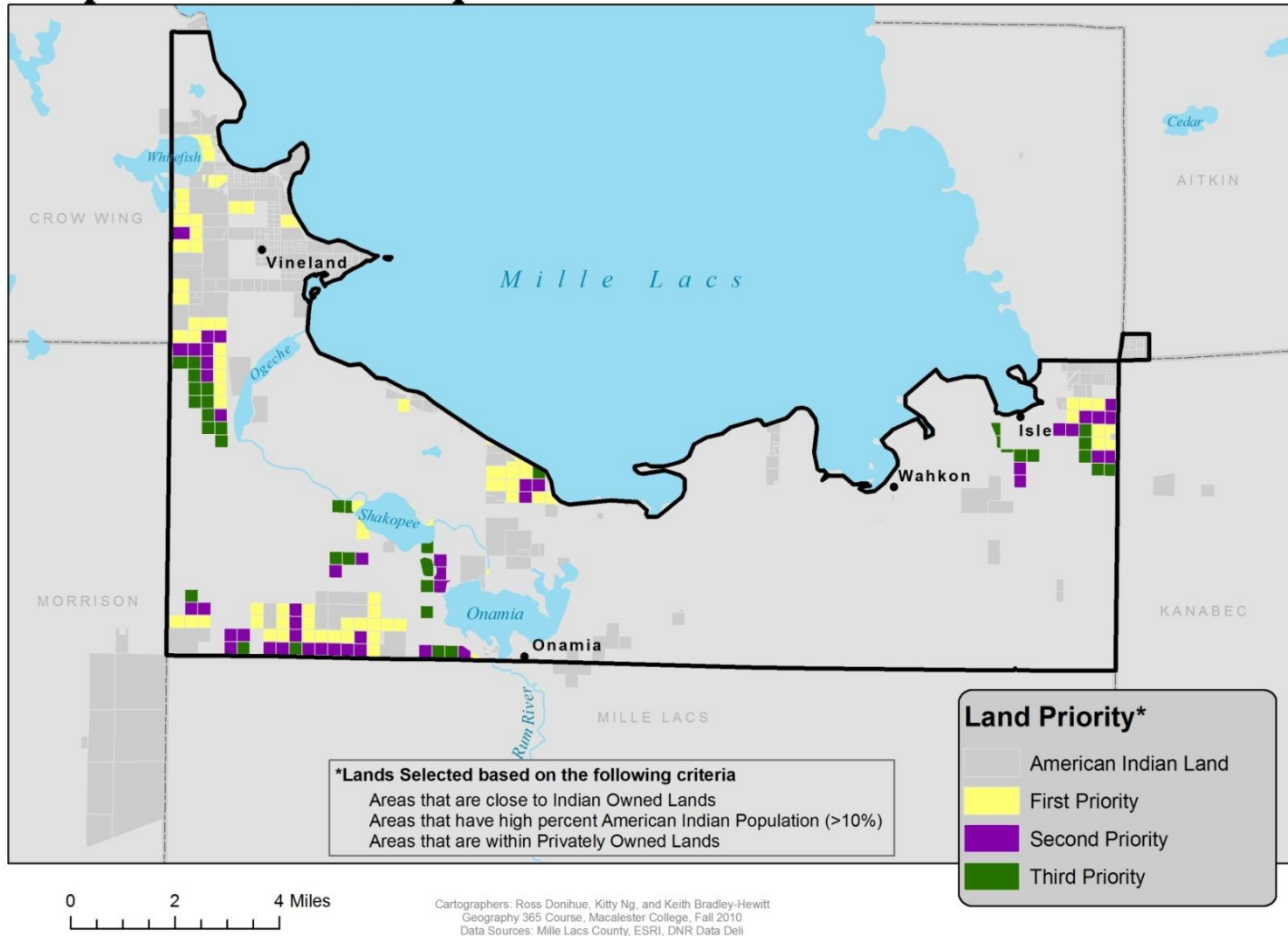
The majority of land within the reservation boundaries is forested, wetland, or grassland.

Land Tenure - Mille Lacs Reservation



The majority of land within the reservation boundaries is in private or state ownership.

Proposed Land Reacquisitions



This map depicts potential lands for tribal reacquisition based upon the criteria listed.

Land Reacquisition Constraints

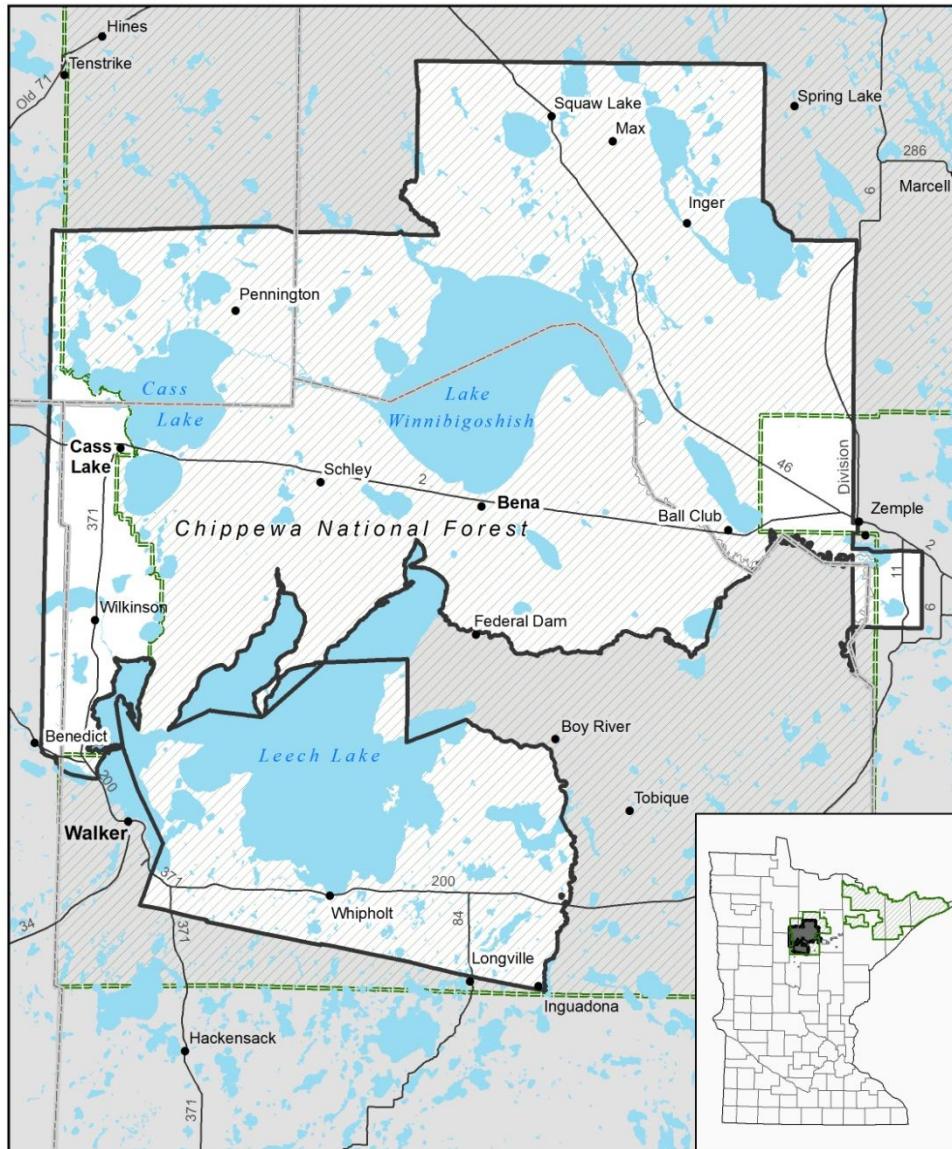
- Natural resources, water, and forest
- Economic development, tourism
- Diverse ownership of lands within the reservation boundaries

Leech Lake Reservation



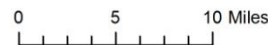
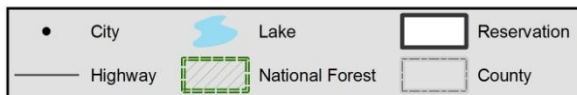
Amanda Caneff, Jill Goforth, Anna Kistin

Leech Lake Reservation



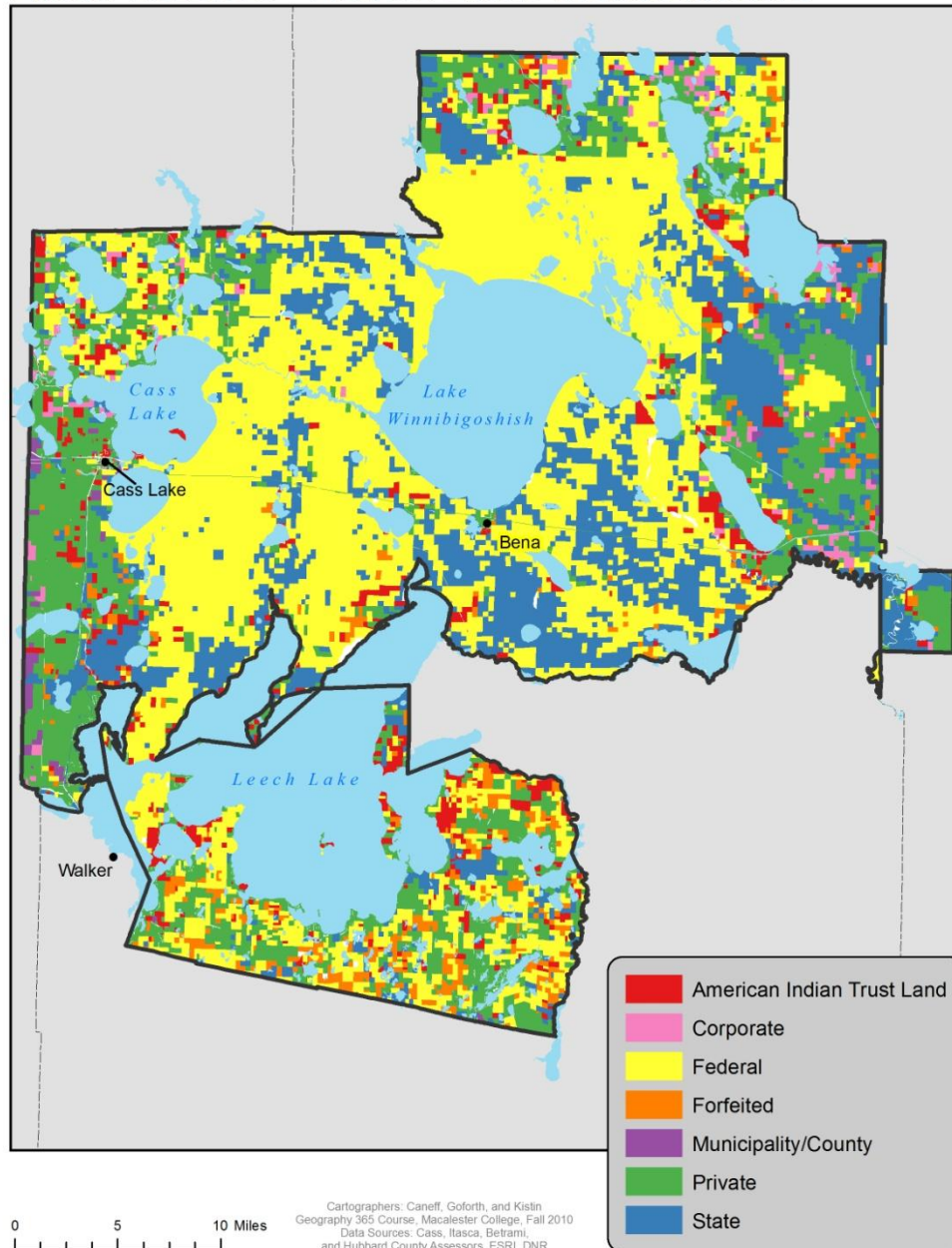
Lakes and forests are prominent in Cass, Itasca, Hubbard, and Beltrami counties.

The Chippewa National Forest covers most of the reservation.



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

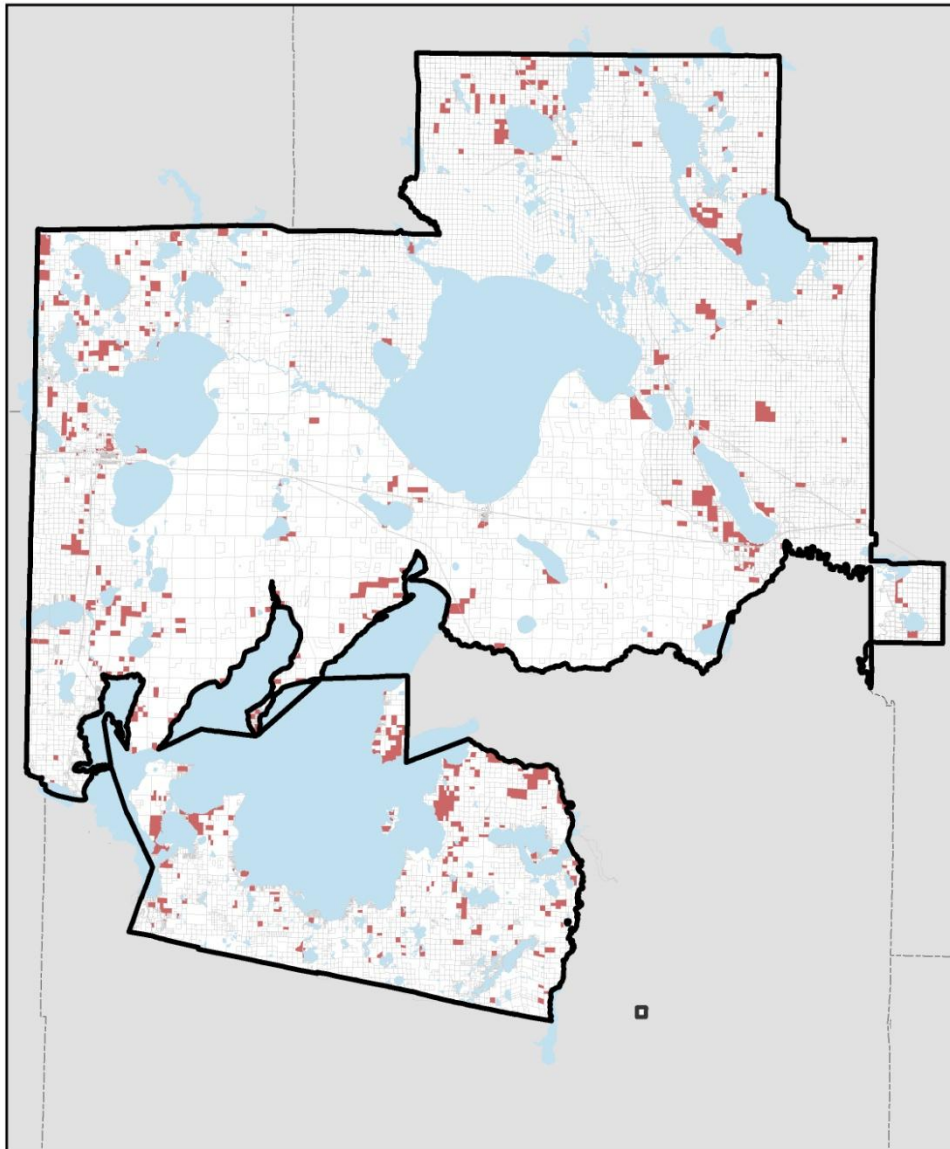
Land Tenure - Leech Lake Reservation





Therefore, the majority of land on the reservation is owned by the U.S. Government.

The presence of other landowners results in an acute pattern of *checkerboarding* and very little land held in trust.

Indian Trust Land - Leech Lake Reservation



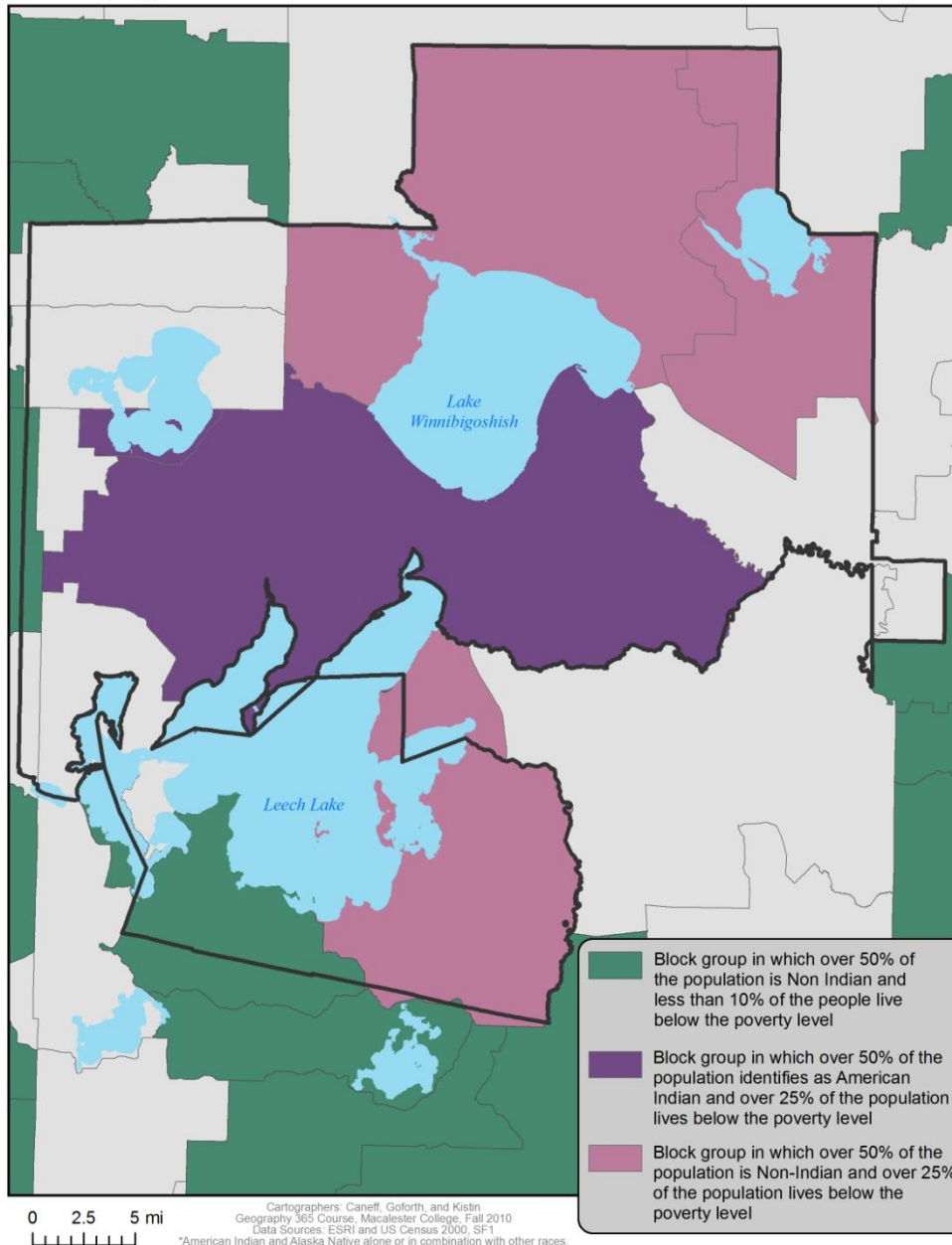
 American Indian Trust Land
 Other

0 5 10 Miles

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

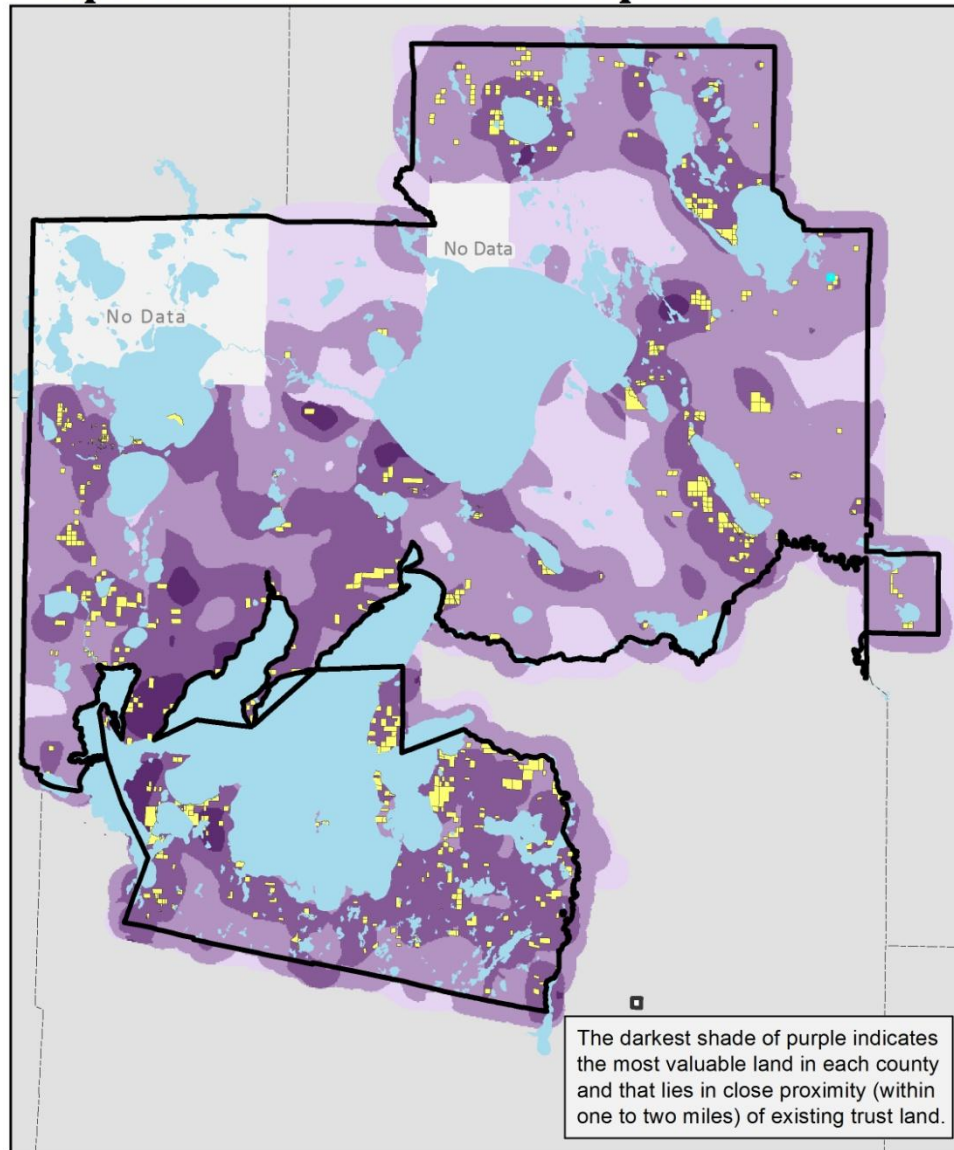
The only land still held in trust by the tribe is shown in red.

Poverty, Affluence, and Race - 2000



While block groups with both majority Indian populations and majority non-Indian populations experience high levels of poverty, the only block groups in and around the Reservation that have *low* levels of poverty are majority non-Indian.

Proposed Areas for Land Reacquisition

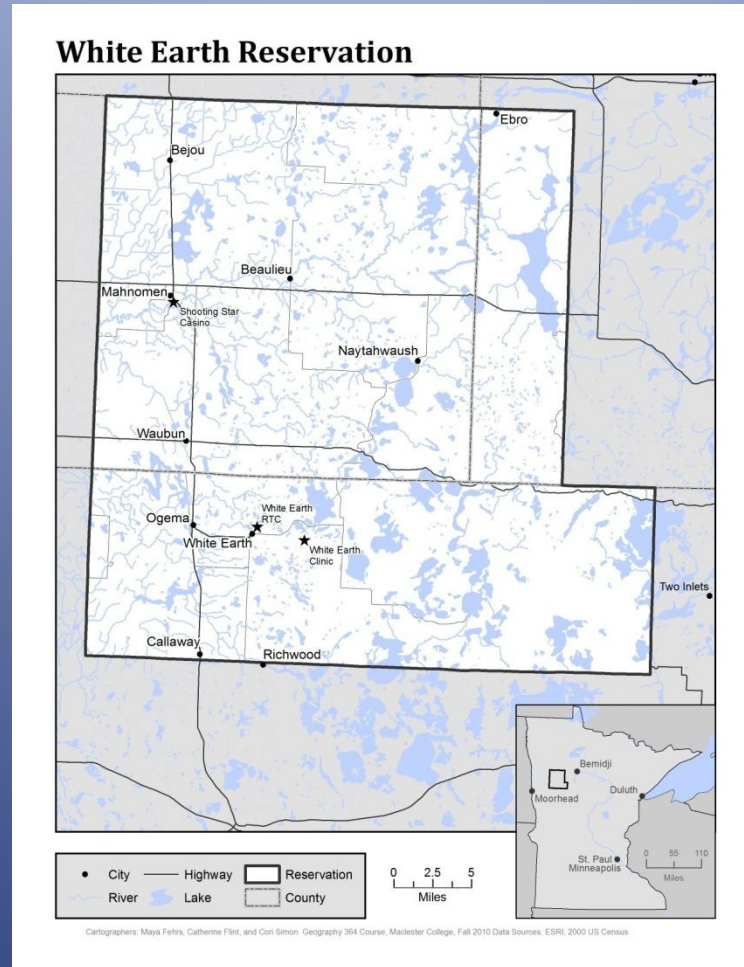


The most valuable parcels in close proximity to existing trust land are shown in the deepest shades.

This map illustrates the parcels that may be strategic for the band to acquire.

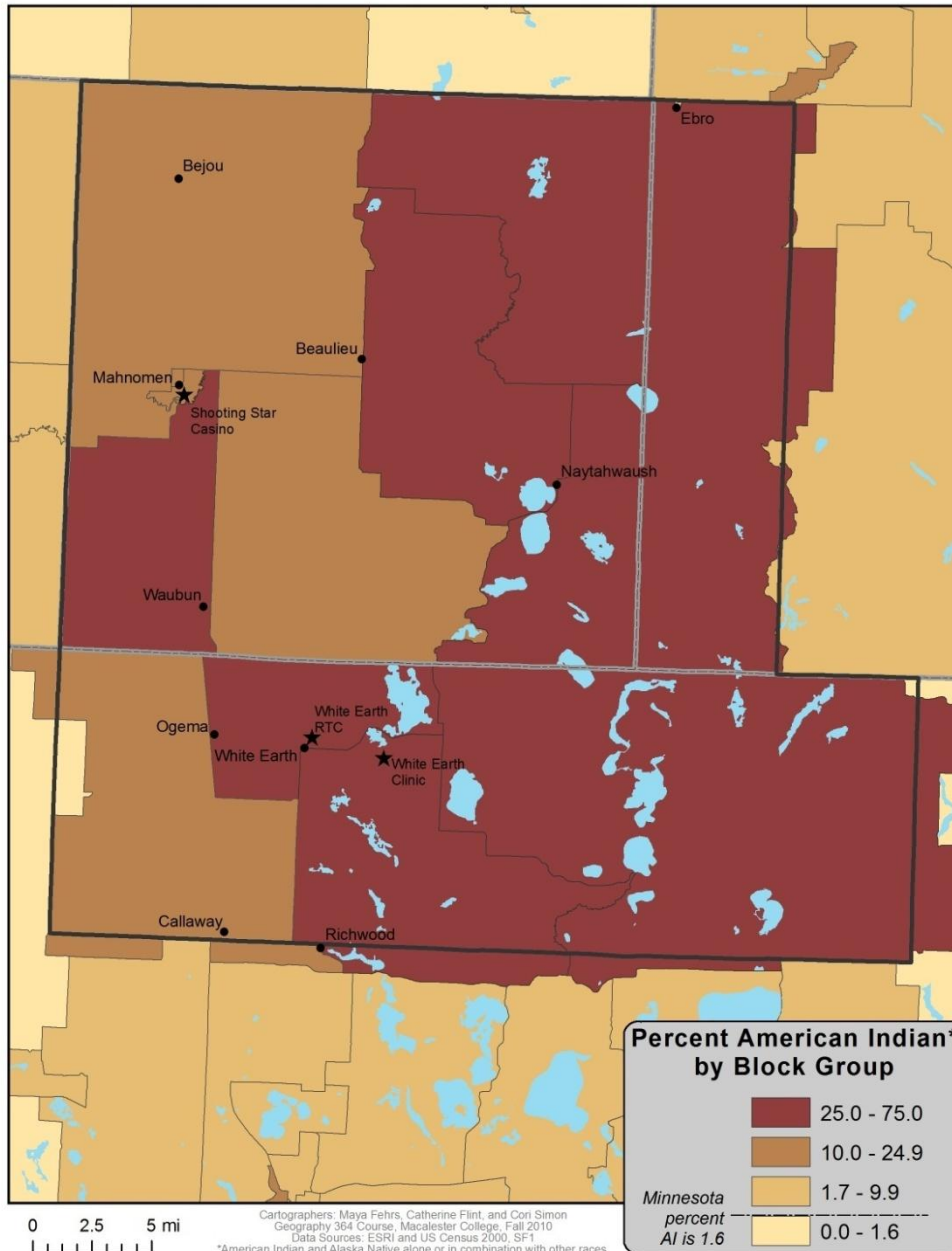
This process is intended as a framework for thinking about reacquisition strategies.

White Earth Reservation



Maya Fehrs, Catherine Flint, Cori Simon

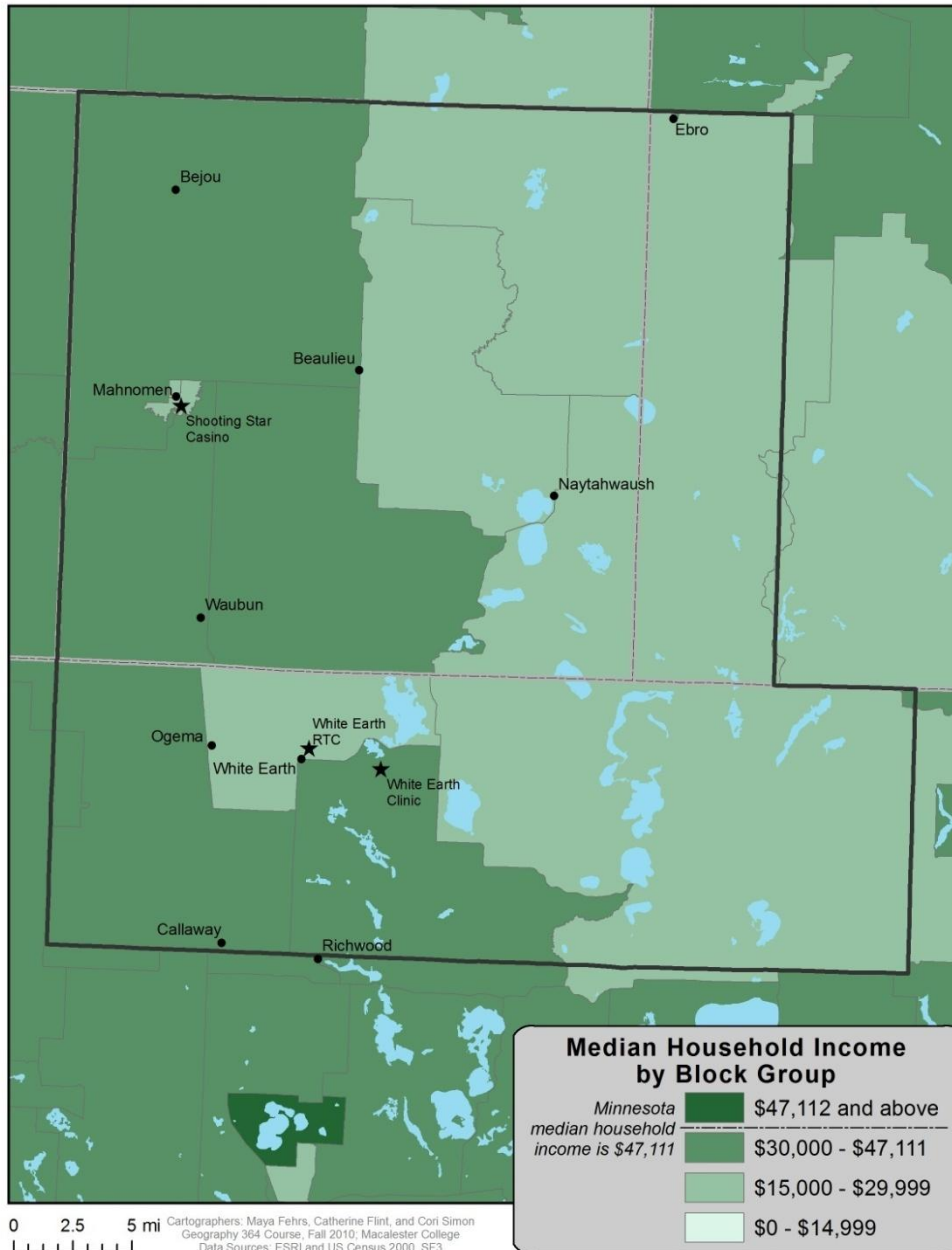
Percent American Indian - 2000



The American Indian population is concentrated on the eastern side of reservation.

This map depicts a strong east-west pattern on the reservation.

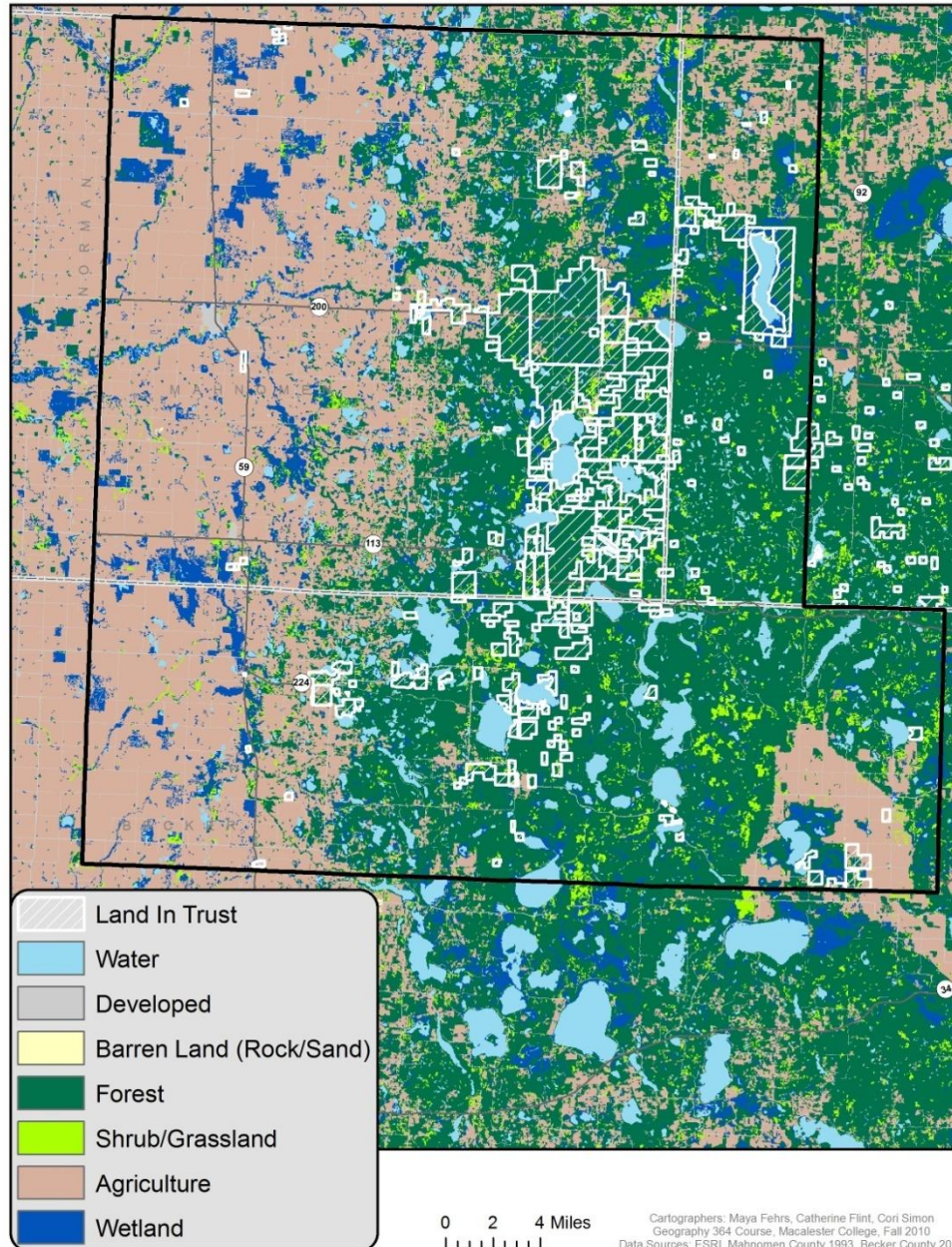
Median Household Income - 1999



The entire area within the reservation boundary lies below the Minnesota median household income level.

The areas of highest median income are located on the western side of the reservation.

Trust Land Cover - White Earth Reservation

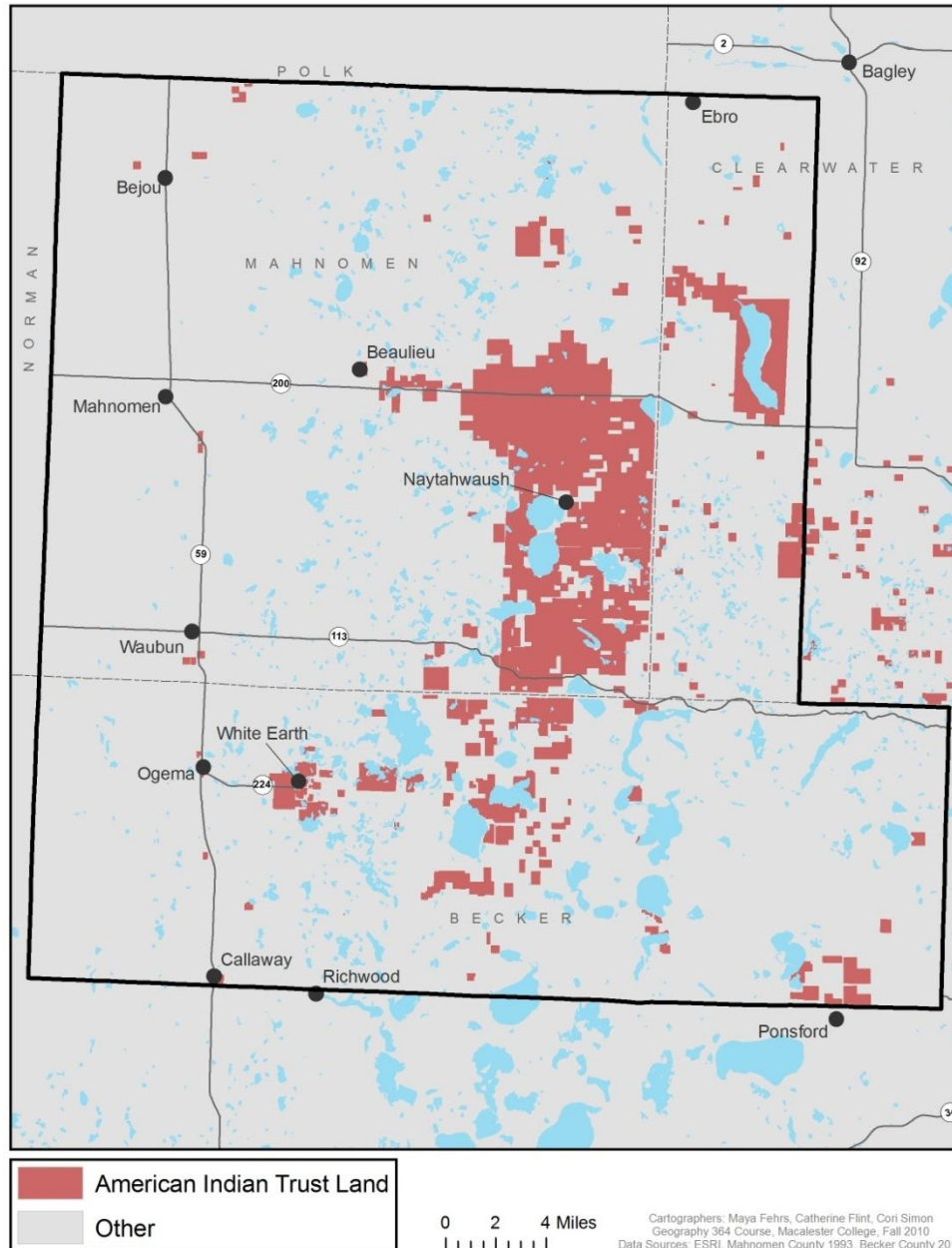


The western half of the reservation is predominantly agricultural; the eastern half is forested.

Most of the land held in trust is forested.

There is a small, concentrated area of development in Mahnomen (Shooting Star Casino).

Indian Trust Land - White Earth Reservation



Trust lands are concentrated in the eastern and central parts of the reservation.

Scattered parcels of trust land are located along Highway 59.

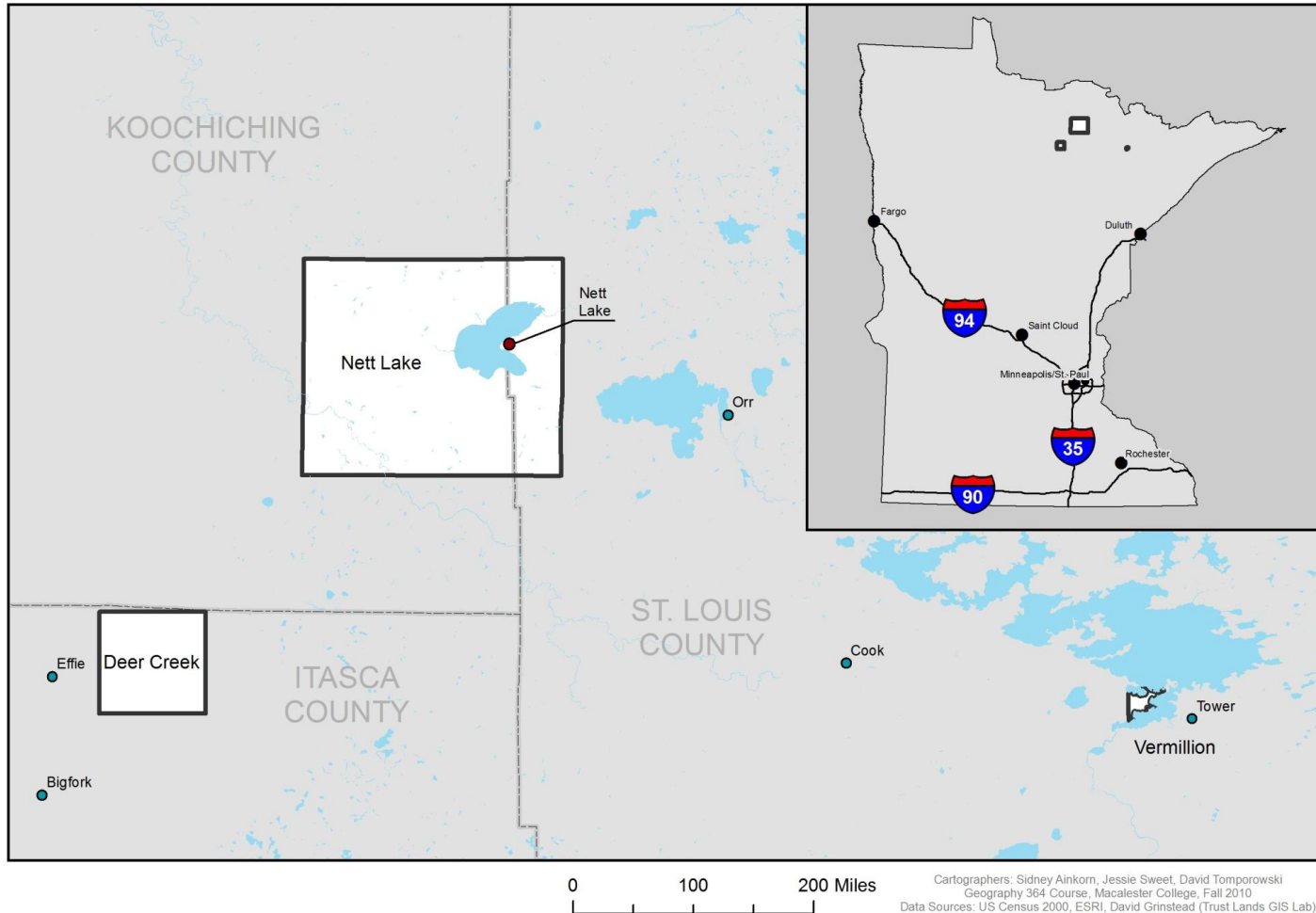
There are off-reservation parcels in trust in four townships outside of the reservation boundaries.

Bois Forte and Grand Portage



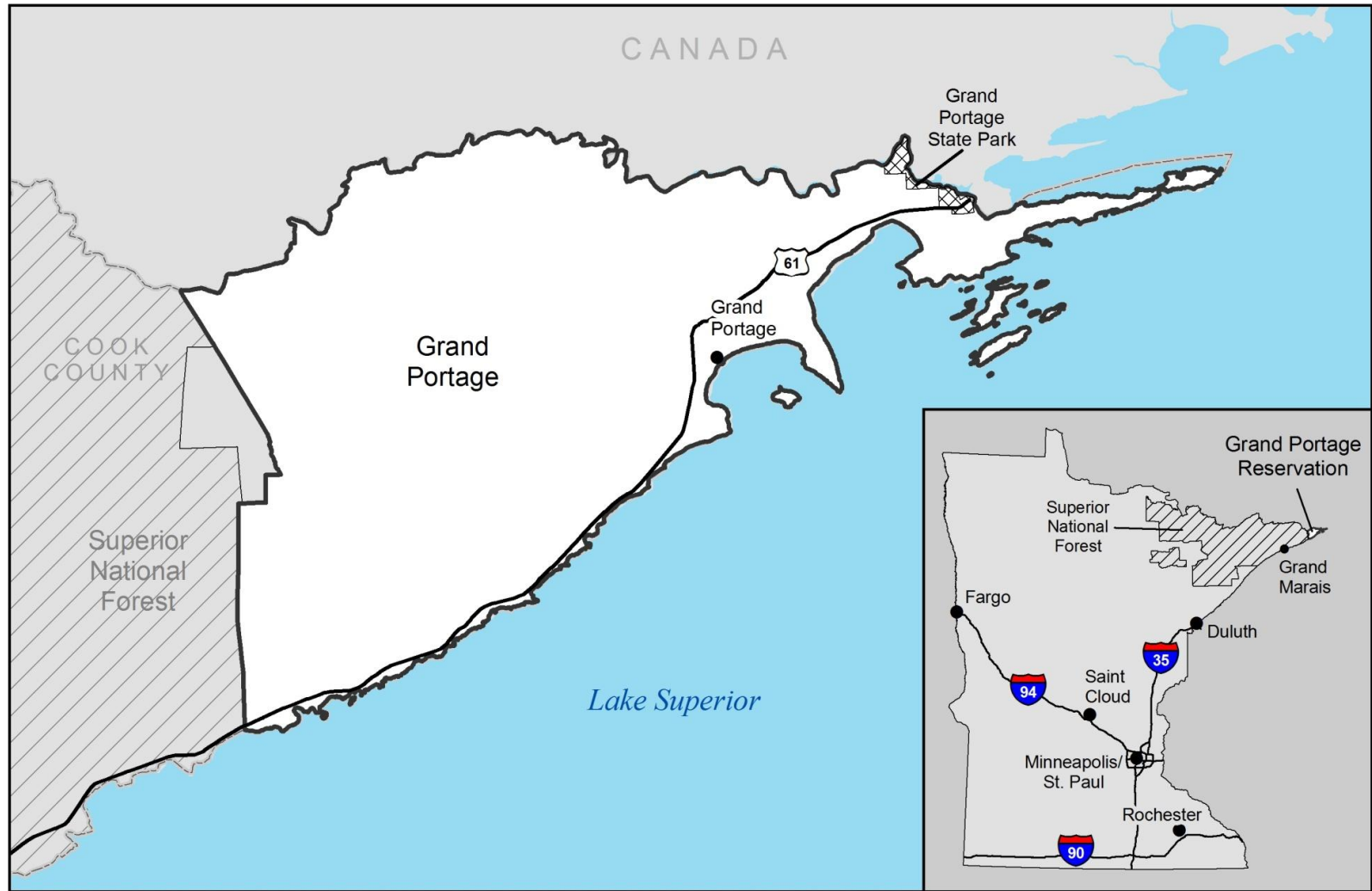
Jessica Sweet, Sidney Ainkorn, David Tomporowski

Bois Forte Reservation



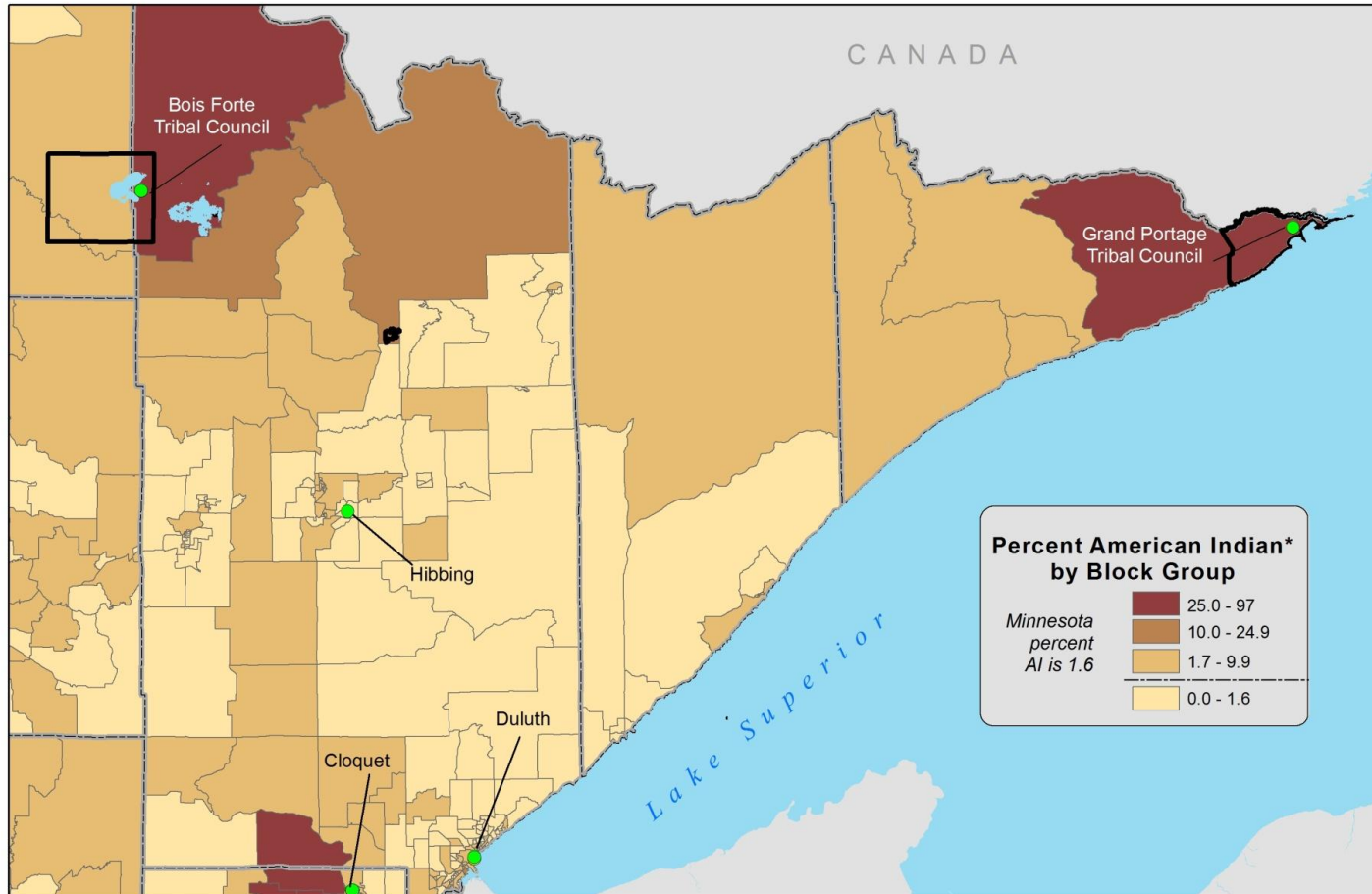
Bois Forte and Grand Portage are located in the Arrowhead region of Minnesota.

Grand Portage Reservation



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

Percent American Indian – 2000

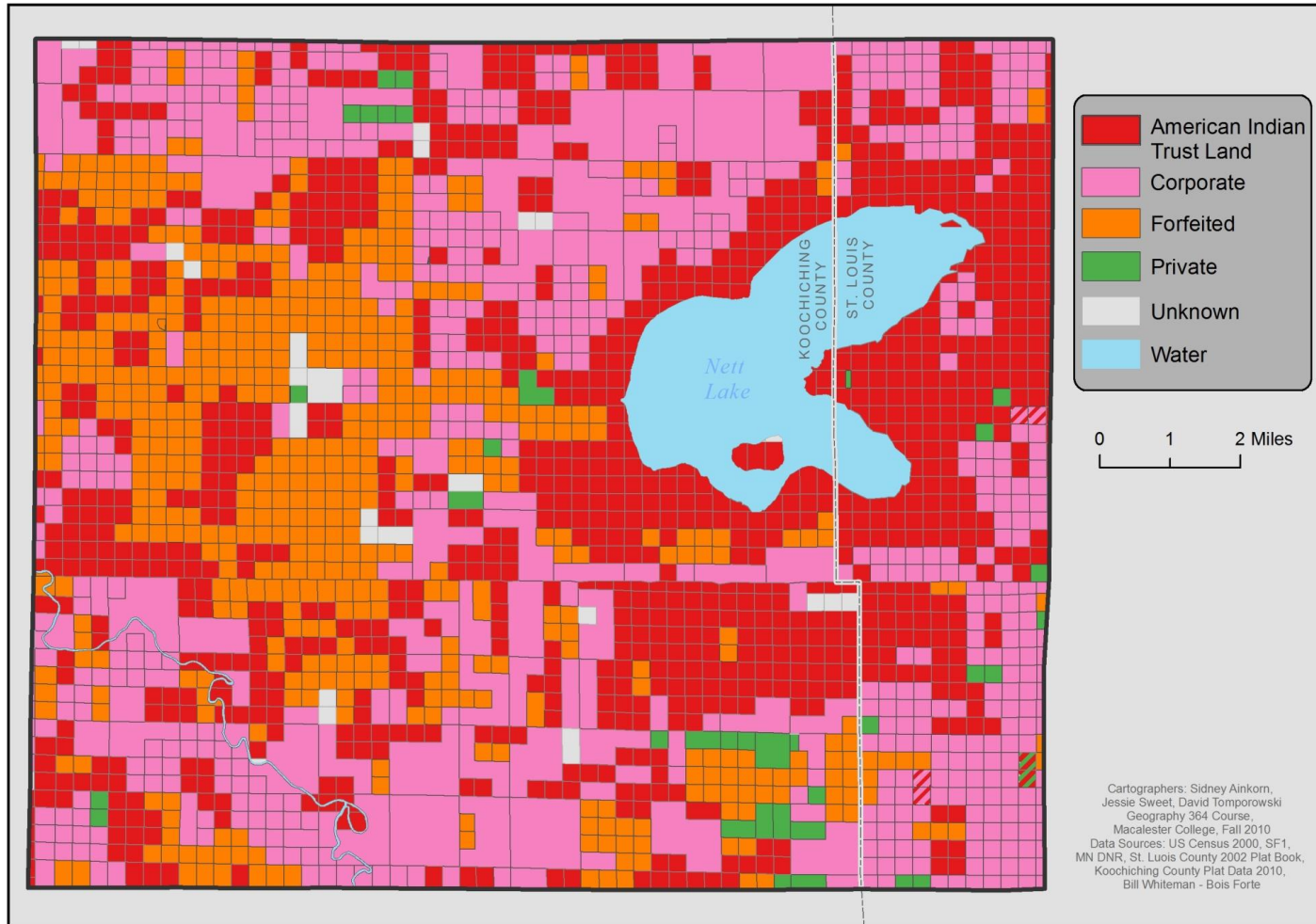


Cartographers: Sweet, Ainkorn and Tomporowski Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI and US Census 2000, SF1 & SF3*American Indian and Alaska Native alone or in combination with other races.

0 25 50 Miles

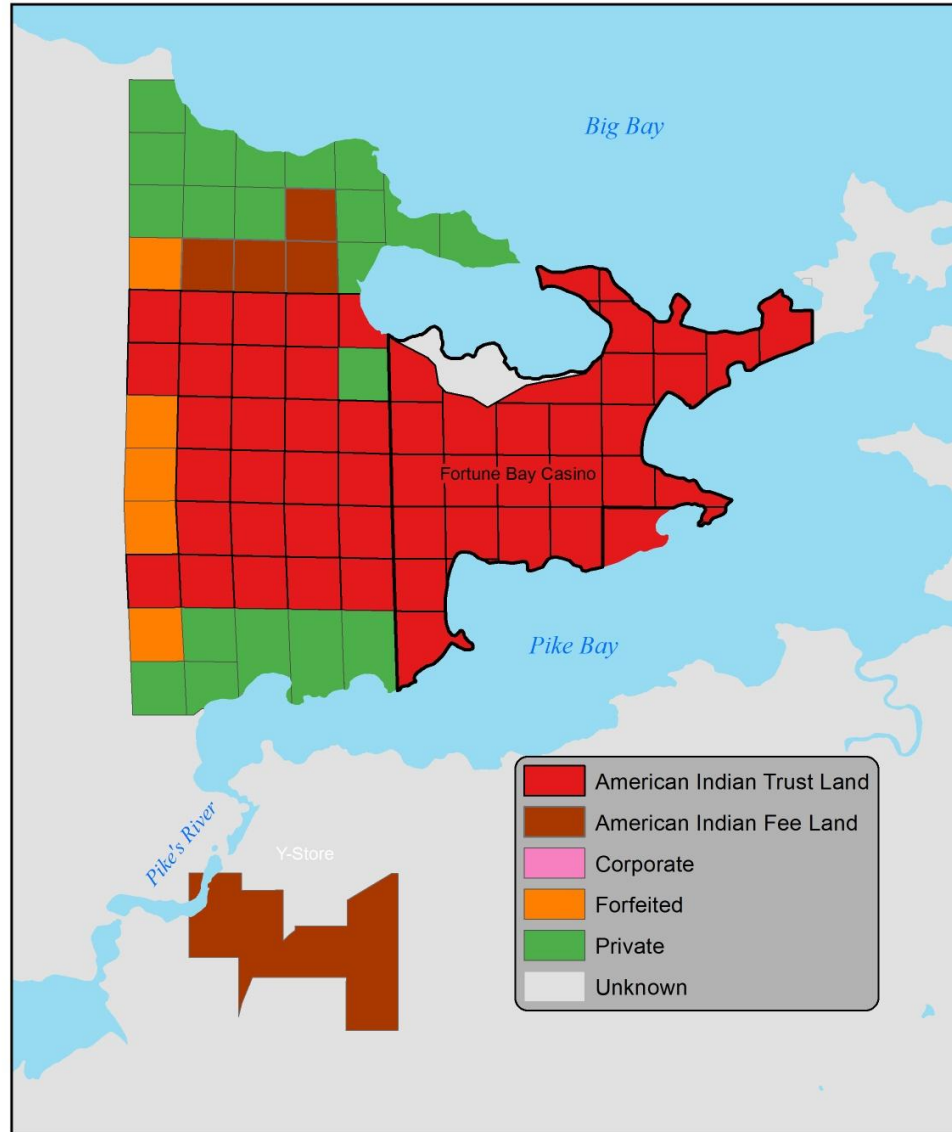
Not surprisingly, Bois Forte and Grand Portage both have a greater concentration of American Indian population than the average for the state of Minnesota.

Bois Forte Land Tenure: Nett Lake



Roughly one-third of the land on the Bois Forte reservation is in trust, and another one-third is owned by private corporations.

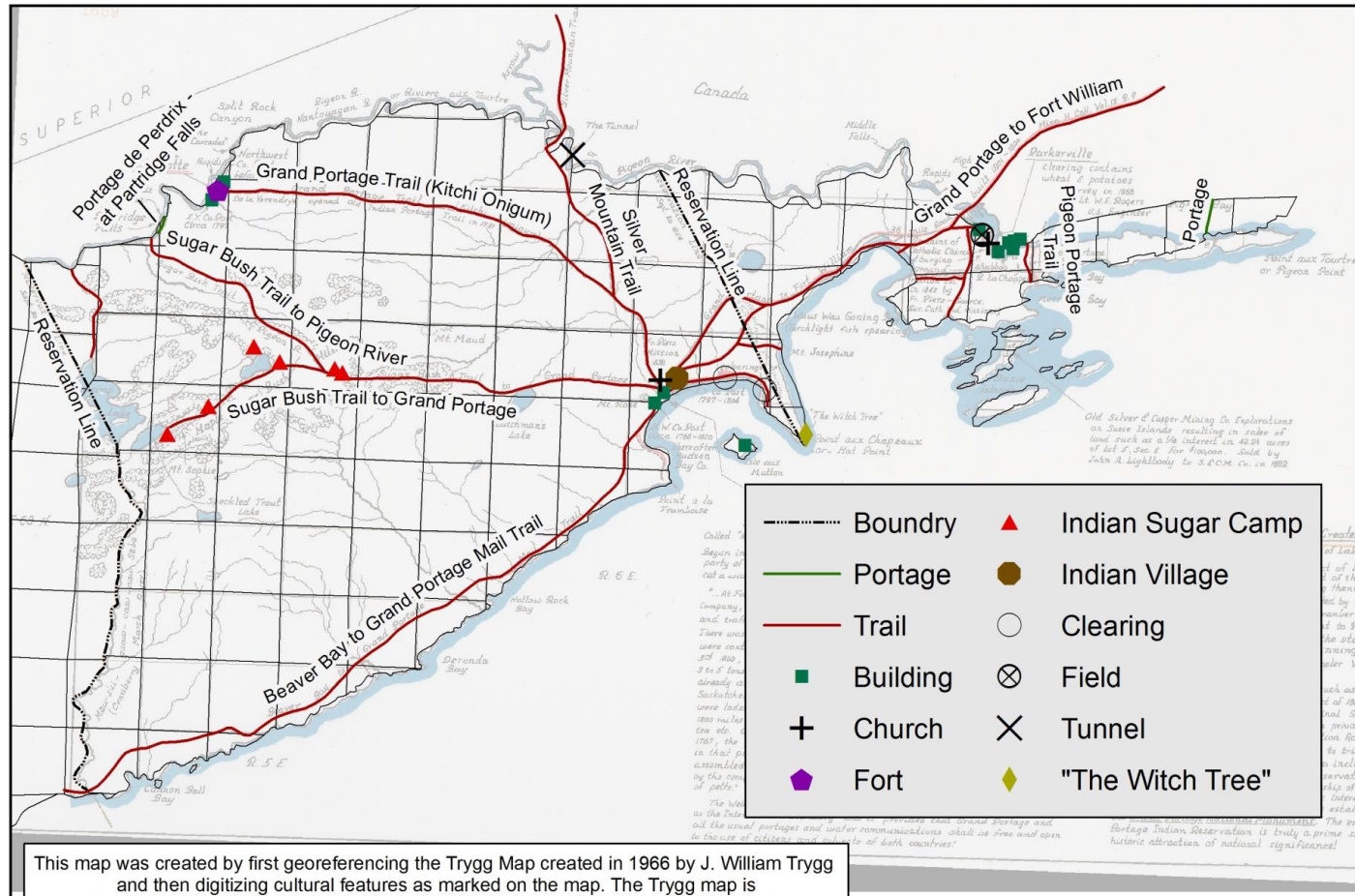
Bois Forte Land Tenure: Vermilion



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

Historical Cultural Features from Trygg Map

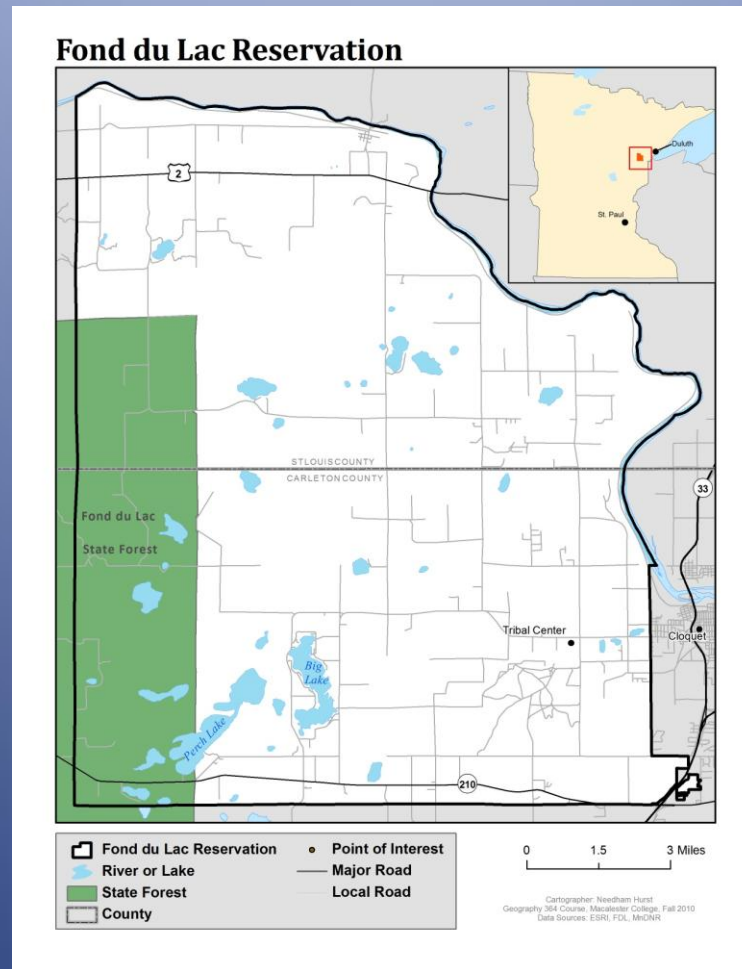


This map was created by first georeferencing the Trygg Map created in 1966 by J. William Trygg and then digitizing cultural features as marked on the map. The Trygg map is based off of the original land surveys of the area conducted between 1859 and 1894. Man made features, such as buildings, along with significant cultural features were digitized. Environmental features such as mountains and water bodies were not considered cultural features and, therefore, not digitized.

0 2.5 5 Miles
 Cartographers: David Tomporowski, Sidney Ainkorn, Jessie Sweet
 Geography 364 Course, Macalester College, Fall 2010
 Data Sources: Minn. DNR, J. William Trygg

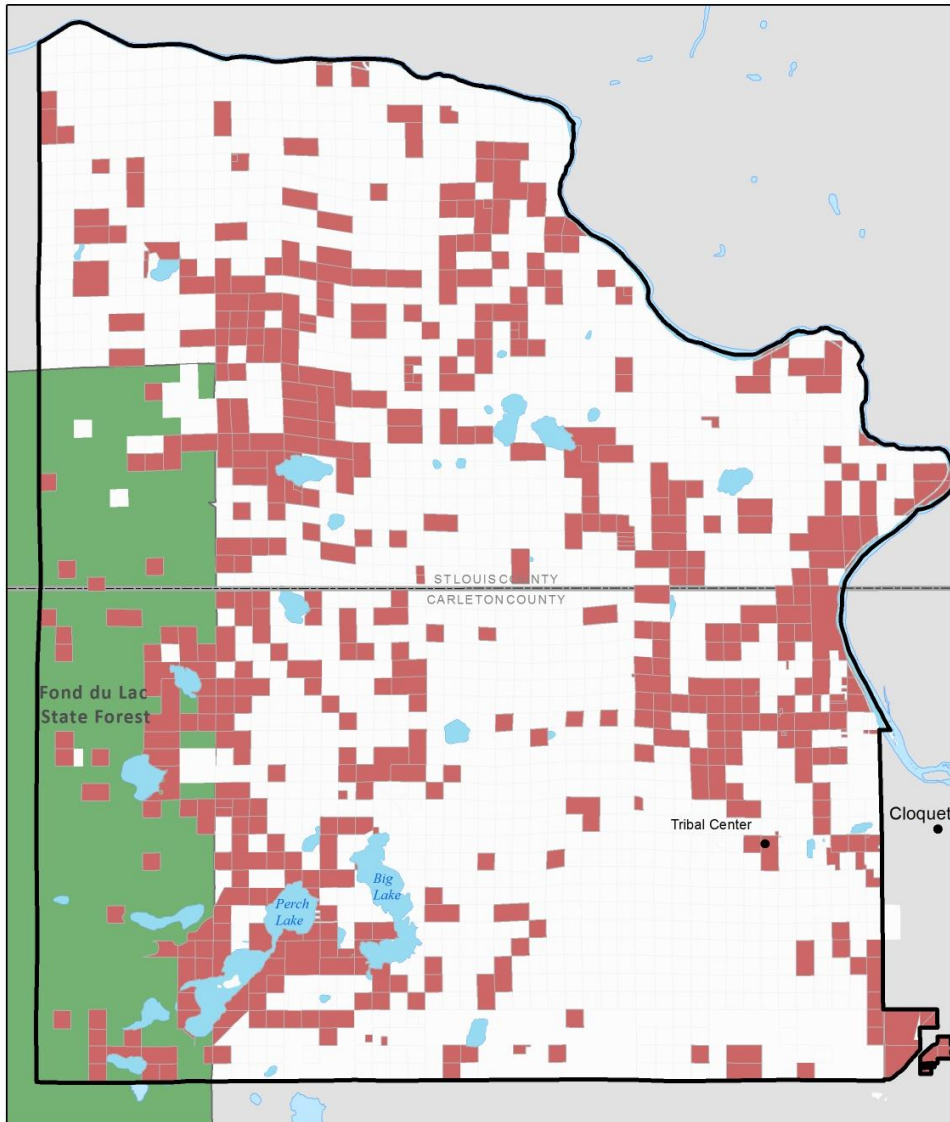
Cultural features were digitized from the Trygg map (1966), which was based on the original survey maps of the area.

Fond du Lac Reservation



Katie Zager, MC Muniz, Needham Hurst

Indian Trust Land - Fond du Lac Reservation

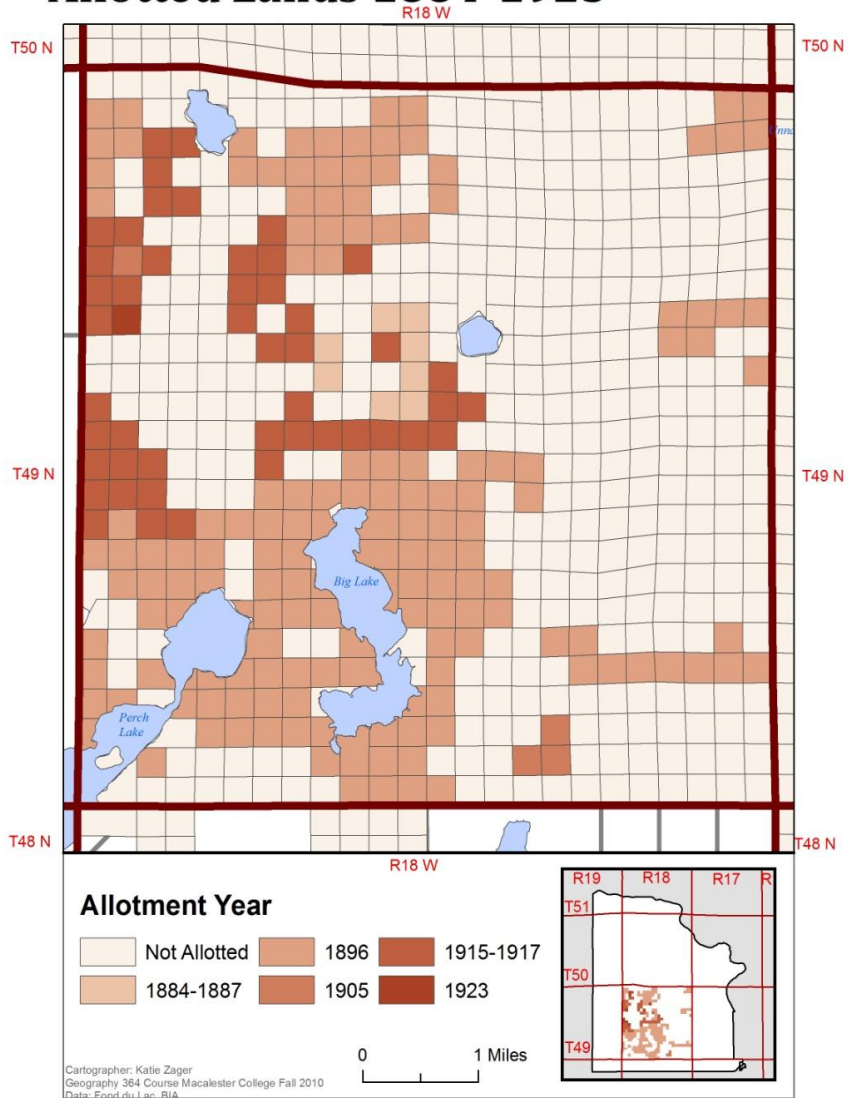


0 1 2 Miles

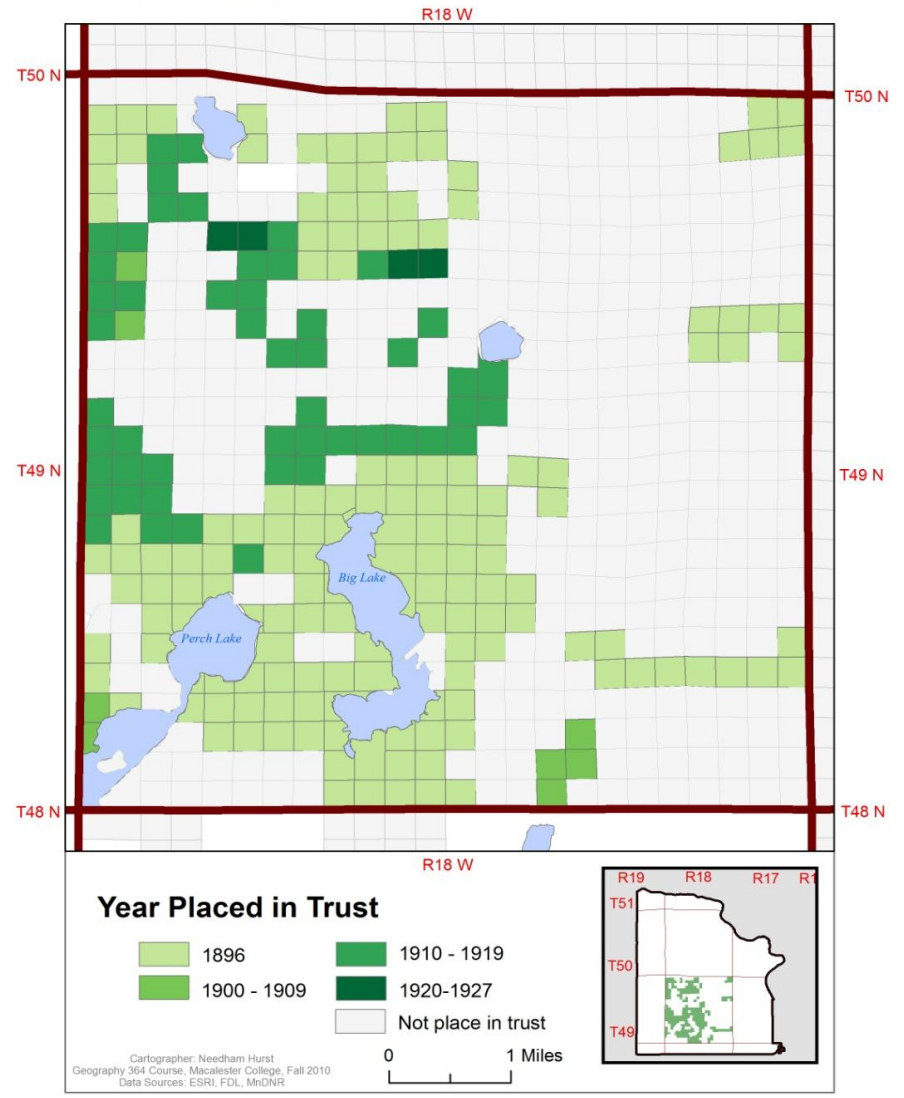
Cartographer: Needham Hurst
Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI, FDL, MnDNR

30.2% of the reservation is currently designated as trust land.

Allotted Lands 1884-1923

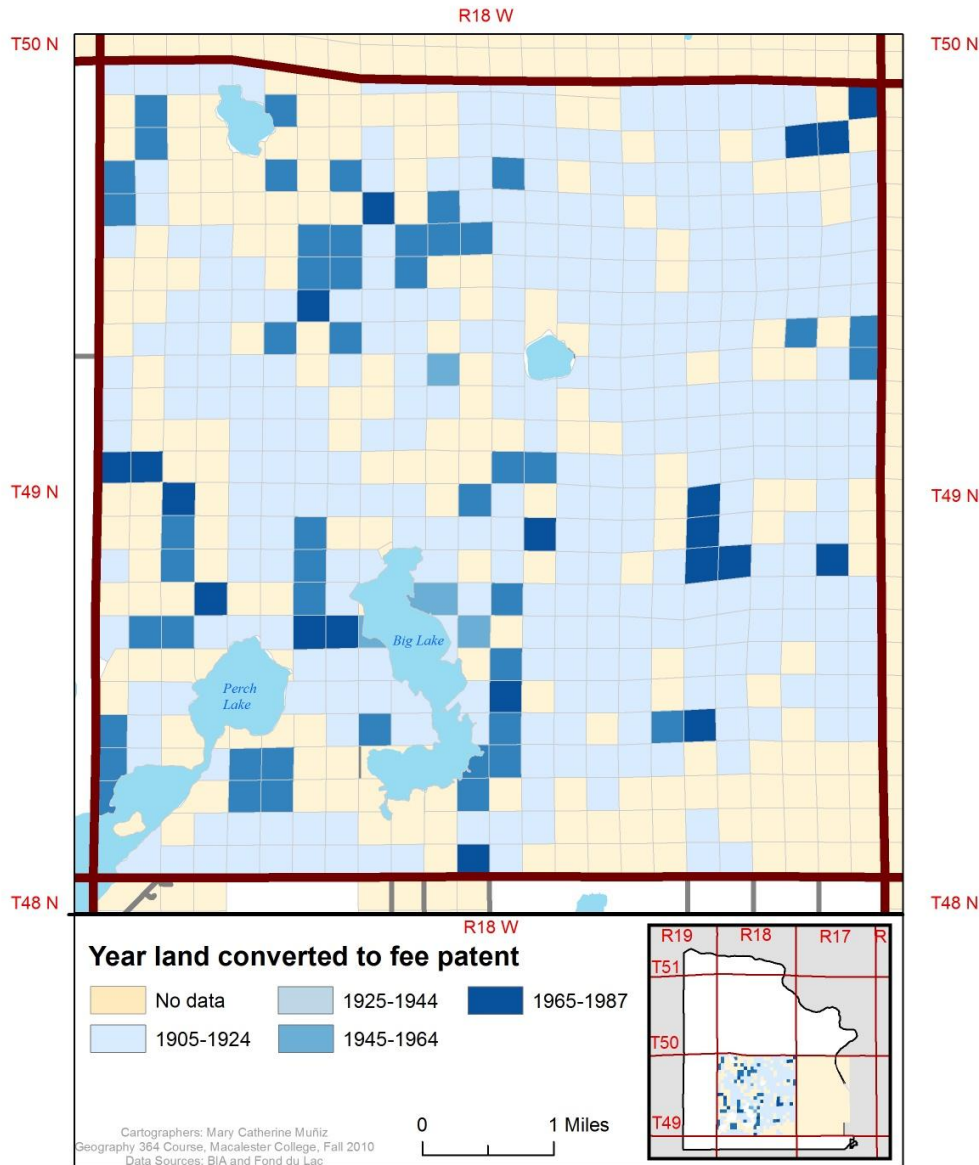


Trust Lands 1896 - 1927



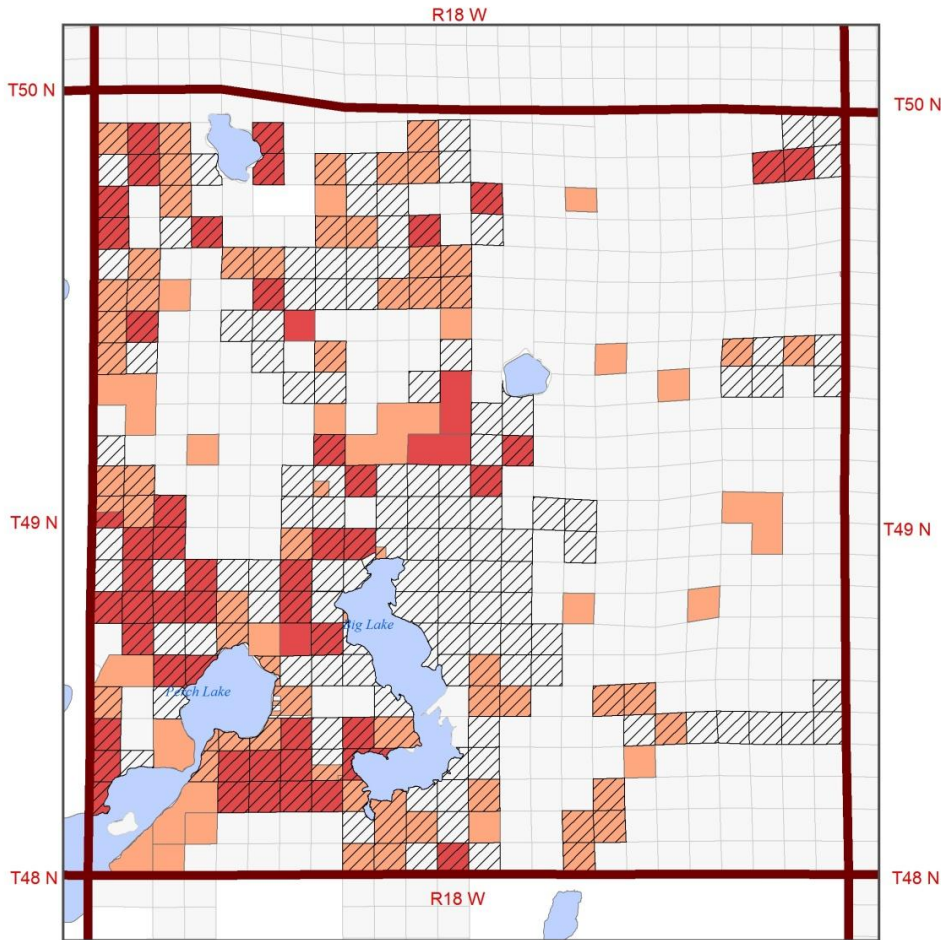
79% of allotted land was transferred into trust in May of 1896.

Fee Lands 1905-1987







As a result of the Burke Act, 53% of land was transferred into fee patent between 1905 – 1924.

Trust Lands - Current and Historic

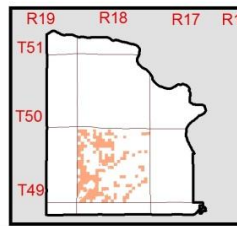


Trust Status

-  In Trust 1896 - 1927
-  Current Individual Trust Land
-  Current Tribal Trust Land
-  Not in trust

Cartographer: Needham Hurst
Geography 364 Course, Macalester College, Fall 2010
Data Sources: ESRI, FDL, MnDNR

0 1 Miles

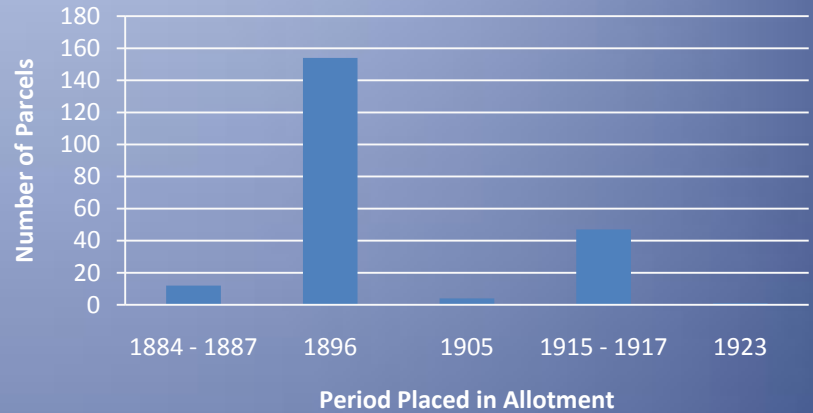


The area northeast of Big Lake was historically in trust, but currently is not in trust.

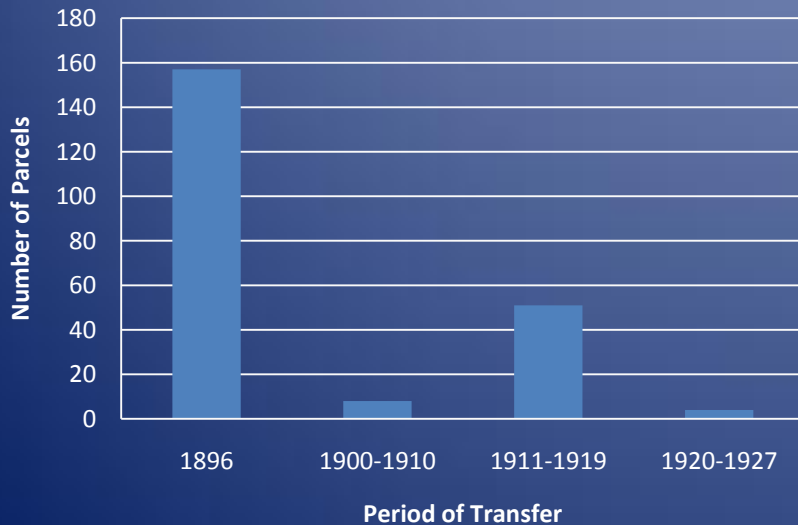
About 35.7% of the land in this area was historically in trust. Currently, 26.8% is in trust; 9.9% is in trust for heirs.

These bar charts graphically depict the complexity of land status change through time for the areas of the Fond du Lac reservation mapped on the previous slides.

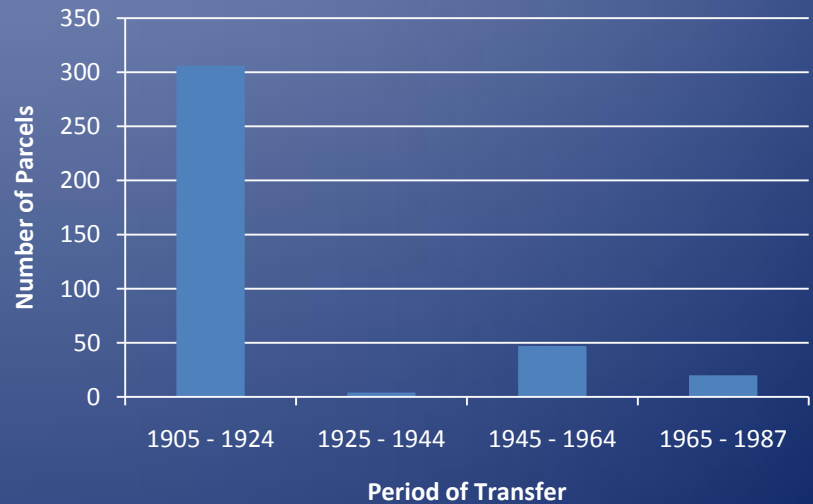
Allotment by Period



Transfer to Trust by Period



Transfer to Private by Period



Project Conclusions

Our Research...

- Provides a *framework* to continue working with tribes on land tenure issues
- Illustrates one small piece of the story

GIS helps to...

- *Visualize* land tenure issues
- *Make connections* between land tenure and socio-economic characteristics
- *Map the history of land tenure* changes over the last century
- *Manage and analyze* current and future land acquisitions

Future Directions

- Continue to be responsive to tribes' needs
- Expand digital database
- Use GIS as a resource for tribes' land tenure goals

Acknowledgements

- Indian Land Tenure Foundation
- Tribal land offices
- County assessor offices
- County auditor offices
- County GIS offices
- Federal Reserve Bank of Minneapolis
- Terry Janis, ILTF
- Paul Schadewald, Macalester College

- Final report will be available January 2011 at:
<http://www.macalester.edu/geography/civic/>

