GIS @ Brock

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Census data represented numerically

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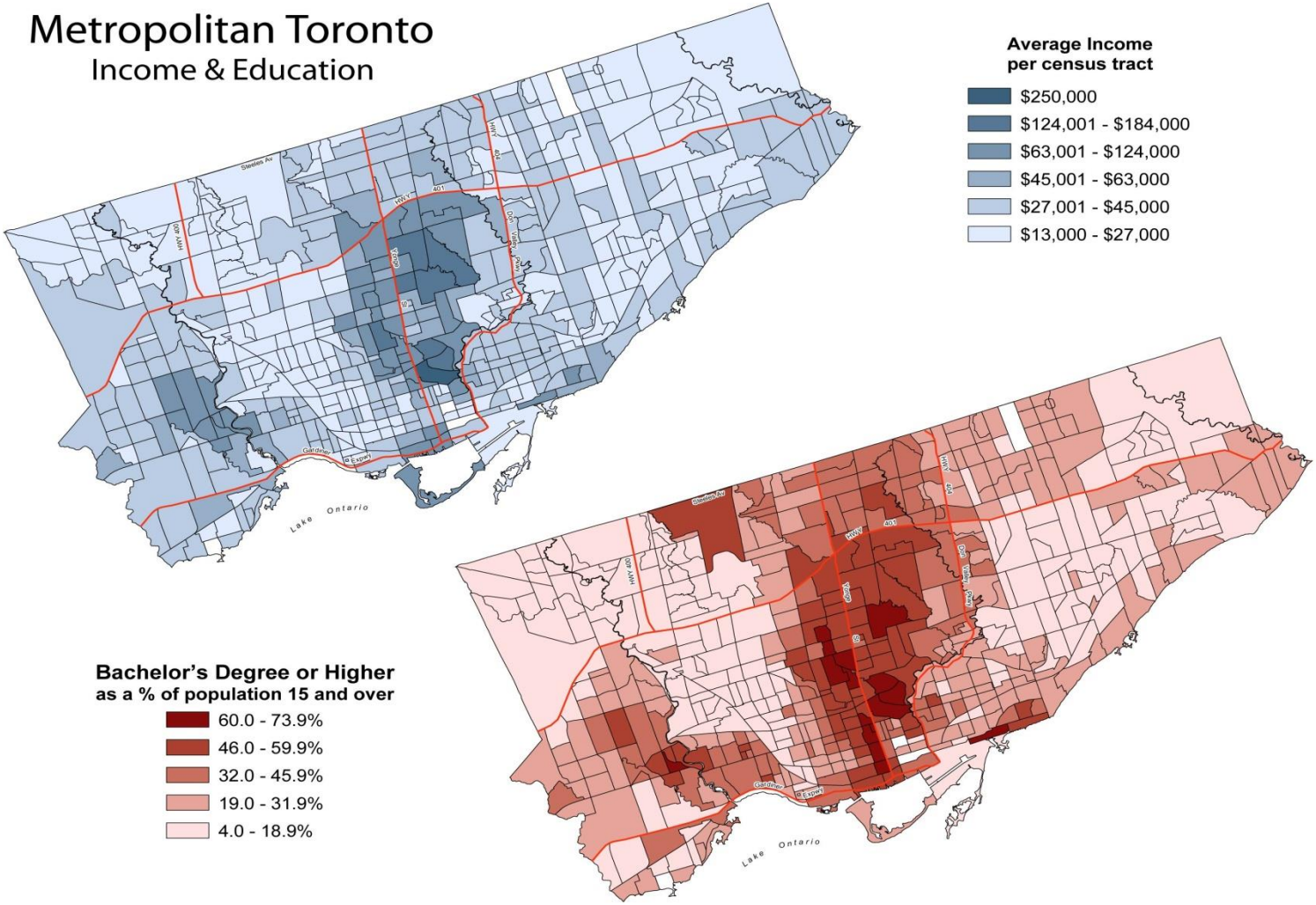
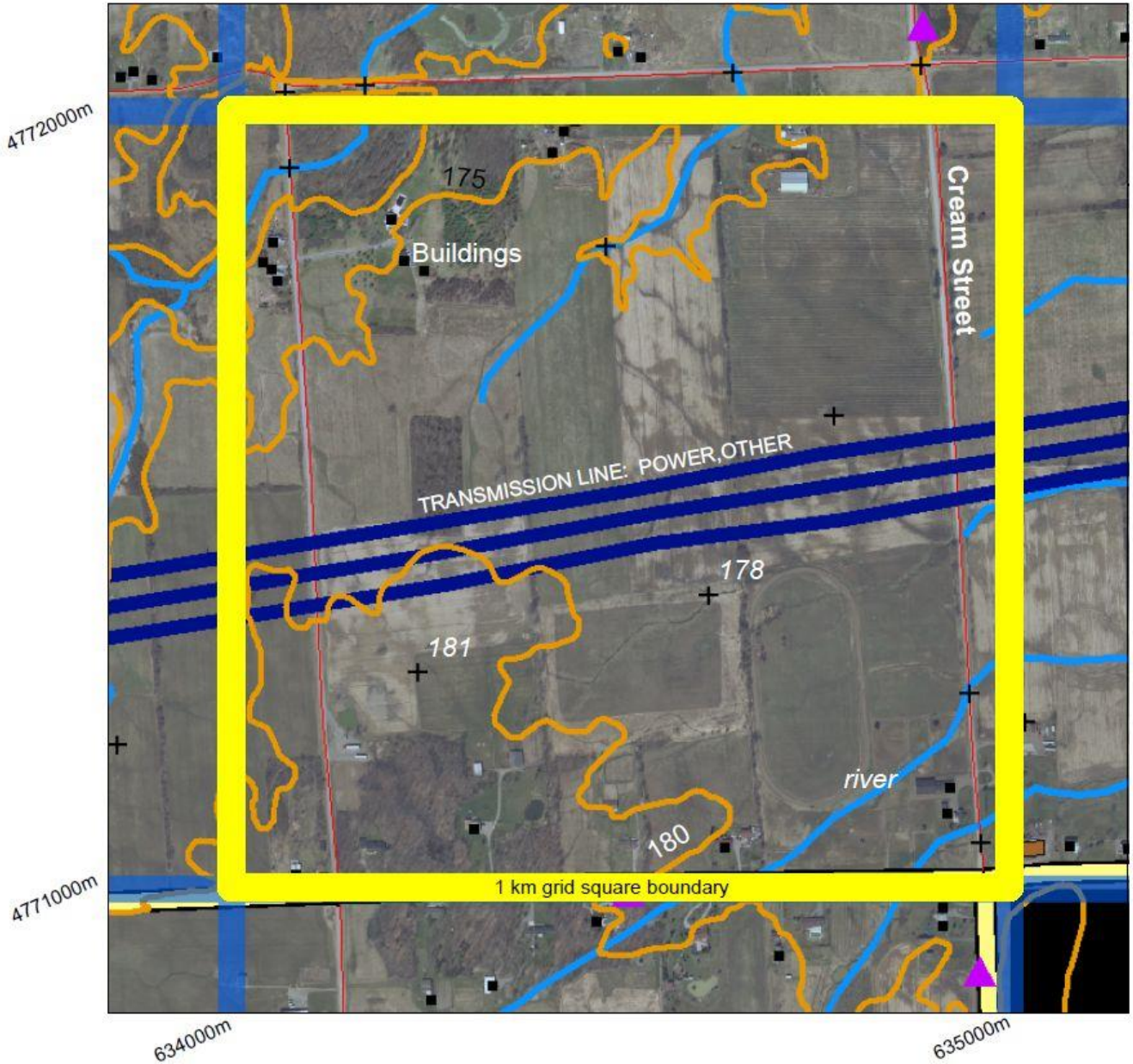
Census data represented geographically

Comparing two census variables

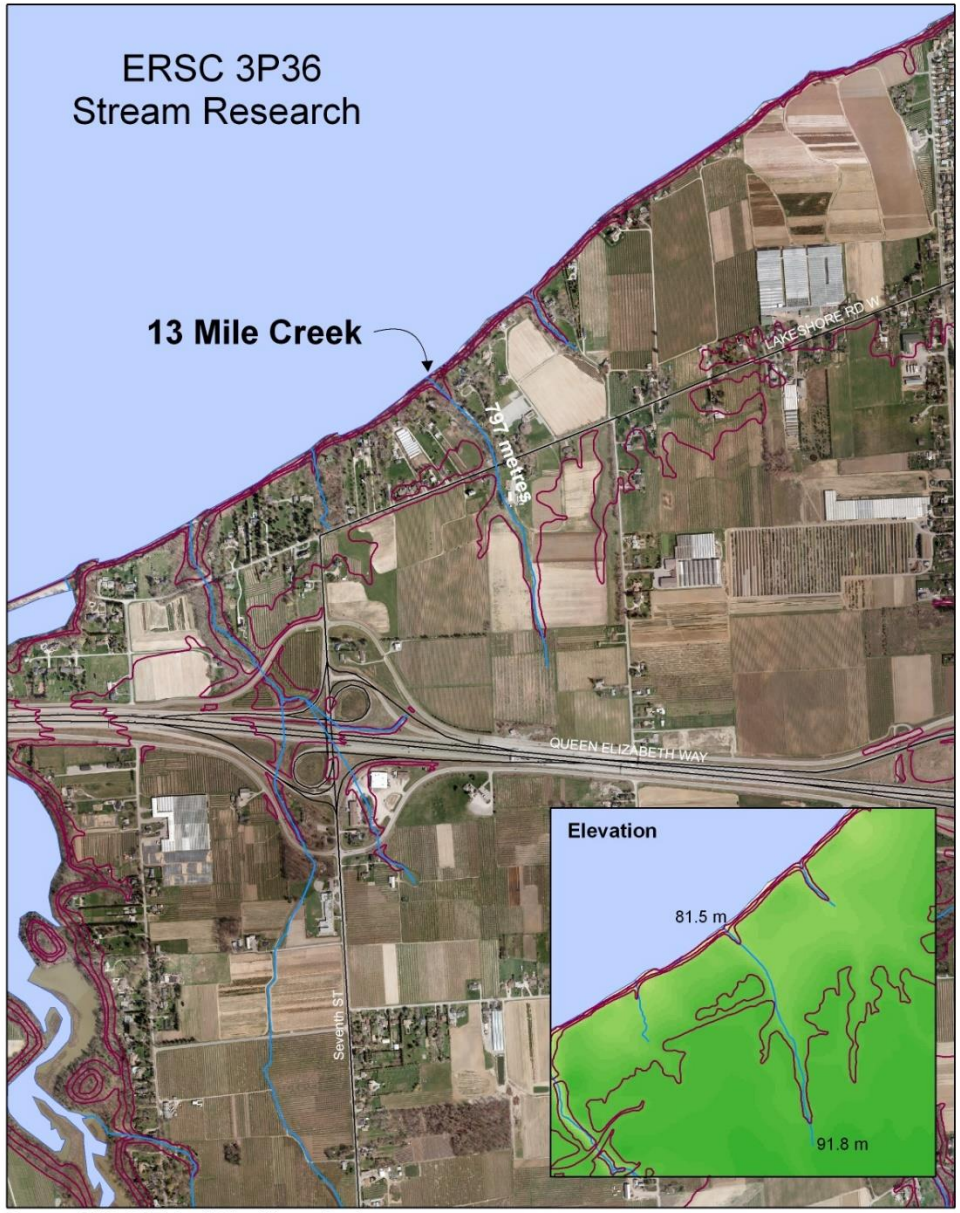


ENVIRONMENTAL STUDIES



Sources: DMTI Spatial, Natural Resources Canada, Ministry of Natural Resources, Ontario Ministry of Agriculture & Food, Regional Municipality of Niagara.

WATER RESOURCES



Sources: MNR, DMTI Spatial Inc, Niagara Region

HEALTH STUDIES

Flu Patients in St.Catharines, Ontario

Legend

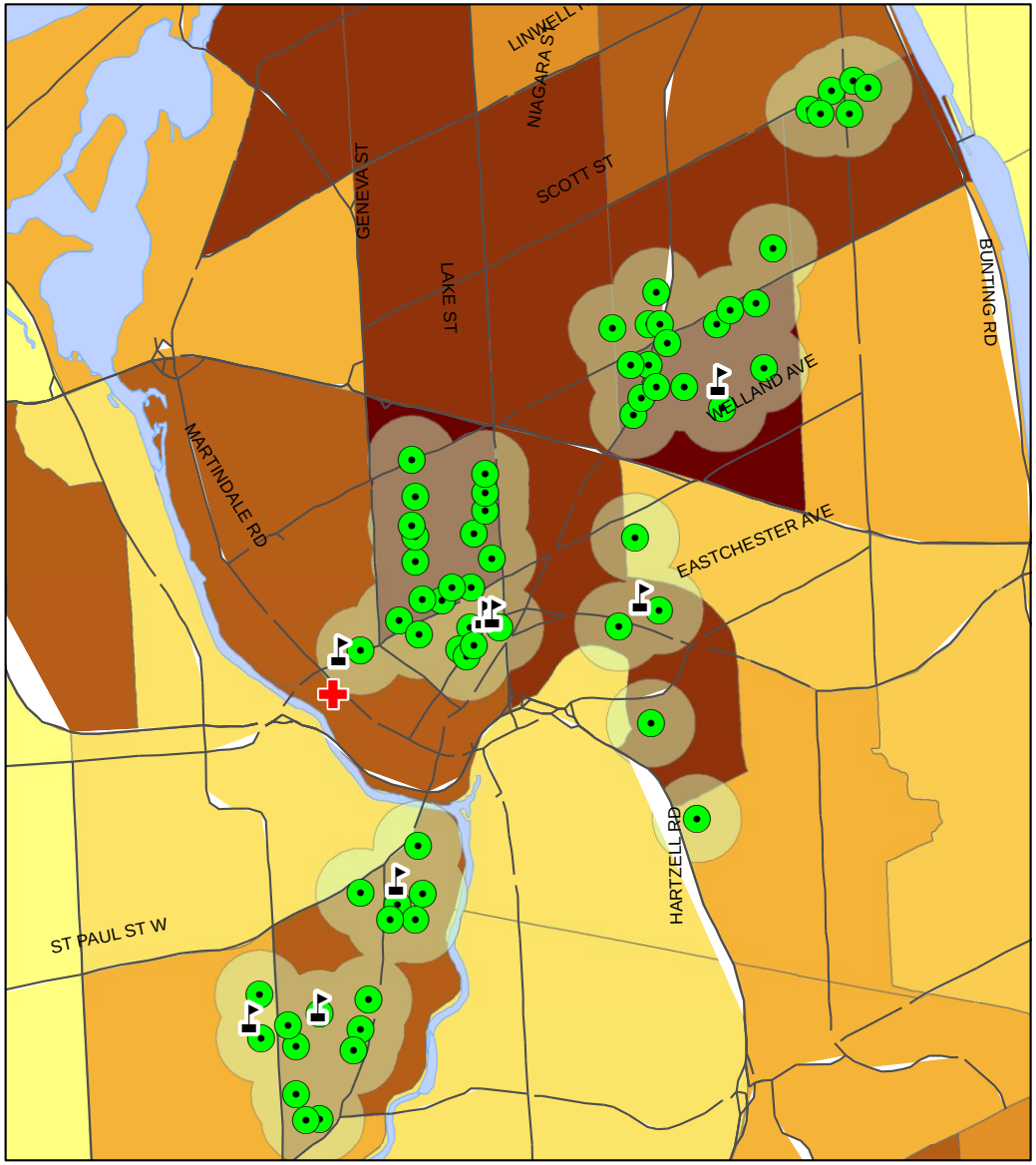
- Elementary School
- Confirmed flu case
- Medical Centre offering Flu shot
- Major Access Roads
- Buffer
- Waterbody

Population Density

- 23 - 223
- 224 - 742
- 743 - 931
- 932 - 1429
- 1430 - 1696
- 1697 - 2138
- 2139 - 2490
- 2491 - 2807

N
W E
S

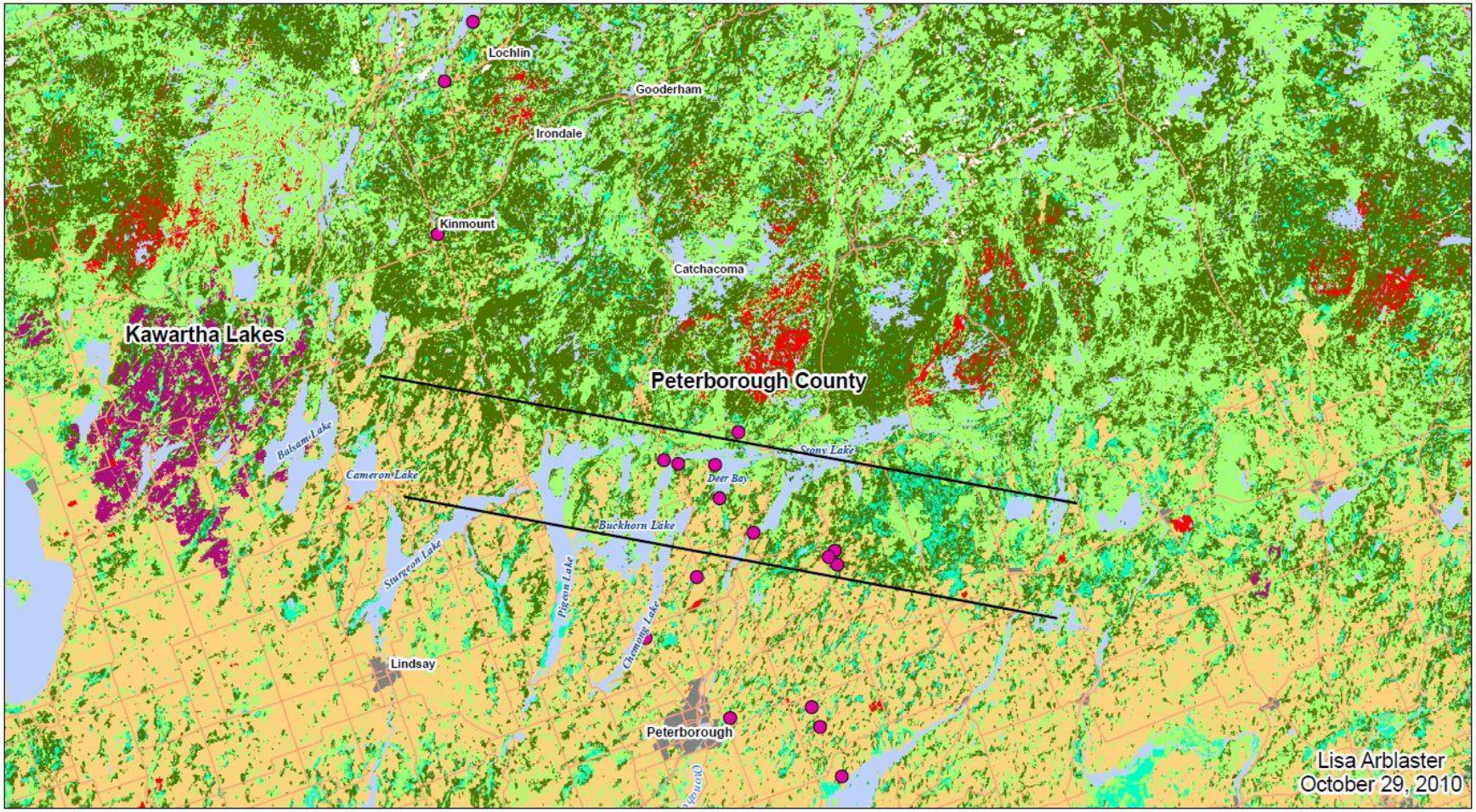
1,000 500 0 1,000 Meters



Sources: DMTI Spatial, Inc., Statistics Canada.

Map prepared by: Brock University Map Library

Landcover of Peterborough & the Kawarthas



- Data Sites
- Road Networks
- Cardan Alvar - sparse vegetation
- Swamp, marsh, bog, fen
- Conifer forest
- Cropland, pasture, abandonned
- Deciduous Forest
- Mine Tailings, Quarries, and Bedrock Outcrop
- Settlement and Developed Land
- Unclassified (cloud & shadow)
- Water

N

0 5 10 20 Kilometers

Source: Ministry of Natural Resources, Ontario Provincial Landcover 2002

The Use of Geospatial Technologies to Characterize Spatial and Temporal Variability of Selected Vineyard Variables at Stratus Vineyards, Niagara-on-the-Lake, Ontario

Marilyne Jollineau and Victoria Fast

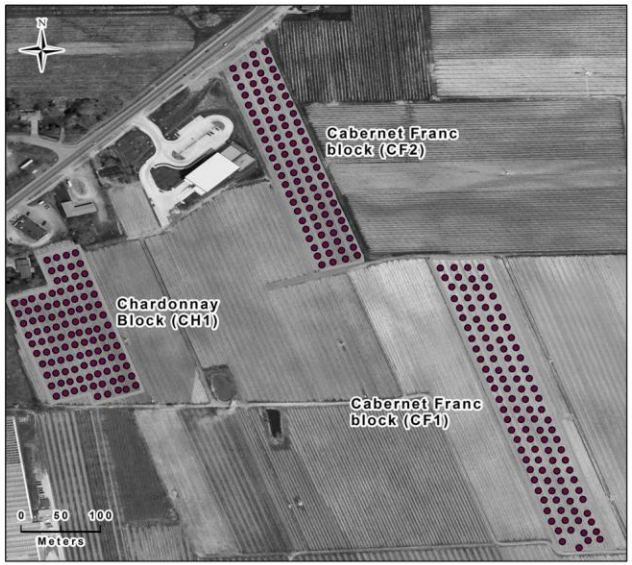


Figure 1: Map showing GPS data points obtained during the 2009 field season from three vineyard sub-blocks at Stratus Vineyards. Each point on the map represents sentinel (sample) vines within each sub-block. To provide some geographical context, these GPS data points have been superimposed onto an airborne remote-sensing image acquired in Spring 2006 (2006 orthoimagery courtesy of The Regional Municipality of Niagara, Area Municipalities and their Suppliers).

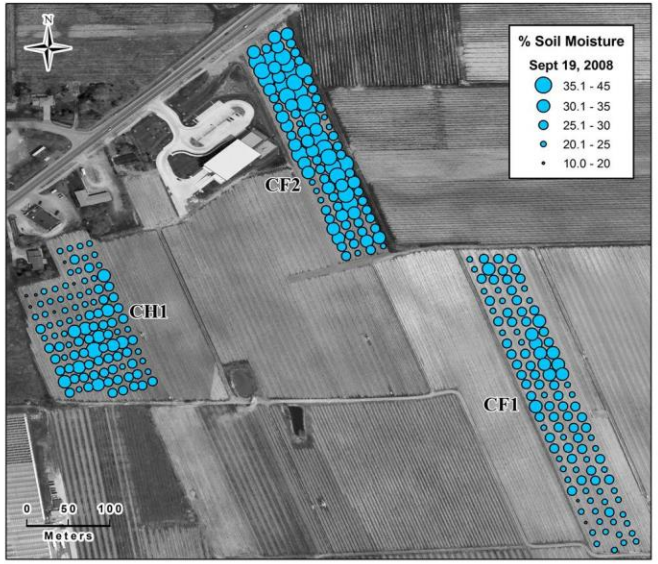


Figure 2: Map showing the spatial variability of soil moisture within and between three sub-blocks at Stratus Vineyards. Soil moisture data were acquired on September 19, 2008, using time-domain reflectometry, measuring volumetric water content as a percentage. Each soil moisture measurement was obtained at an existing GPS location. (2006 orthoimagery courtesy of The Regional Municipality of Niagara, Area Municipalities and their Suppliers.)

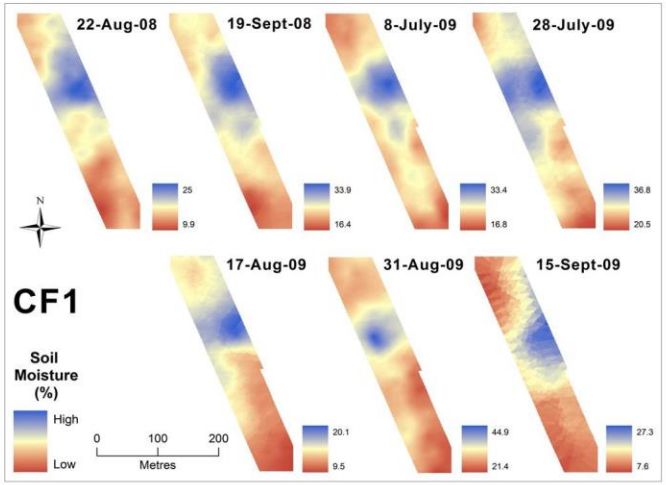


Figure 3: Maps showing the spatial and temporal variability of soil moisture within a Cabernet Franc block (CF1) at Stratus Vineyards (from August 2008 to September 2009). These maps can be used to identify clusters (or zones) of similar soil moisture values. They can also be used to compare the spatial and temporal variability within and between other Cabernet Franc blocks at Stratus Vineyards.

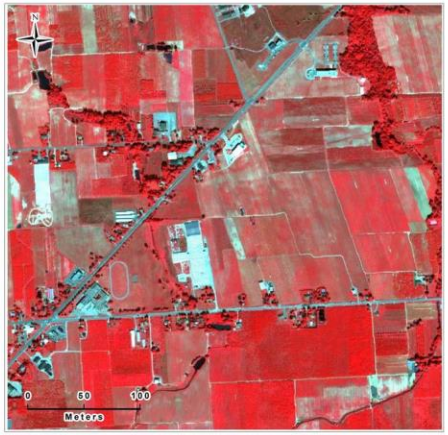


Figure 4: False-colour composite image showing the spatial variability of vine vigour within vineyards located in the Niagara Region of Ontario. This image was acquired by the QuickBird satellite on September 20, 2007 (image courtesy of DigitalGlobe). This type of image allows vegetation to be readily detected in an image. Vegetated surfaces in this image appear in different shades of red depending on the types and conditions of the vegetation while non-vegetated surfaces appear grey, blue, or black in colour, depending on their composition.

HISTORY & DIGITAL HUMANITIES

LEGEND

Walls

- Bridge
- Canal
- Dashed Lines Outside
- Different Material
- Flexume Sign Co. Ltd.
- Internal Divisions (dashed on orig)

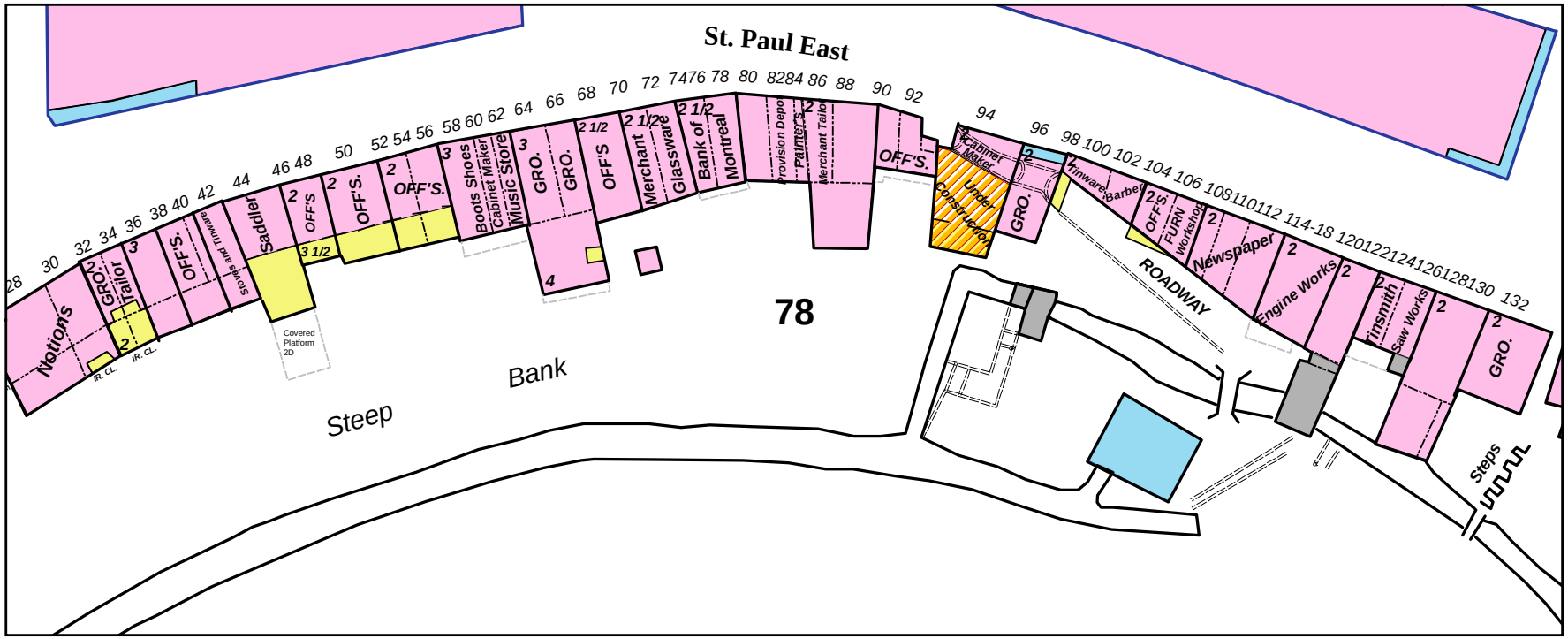
- Not Concerned
- Over the Canal
- Roadway/Canal Area
- Steps
- Wall

Material

- Brick
- Sheds
- Stone
- Under Construction
- Wood

St. Paul Street East, St.Catharines Fire Insurance Plan, 1884

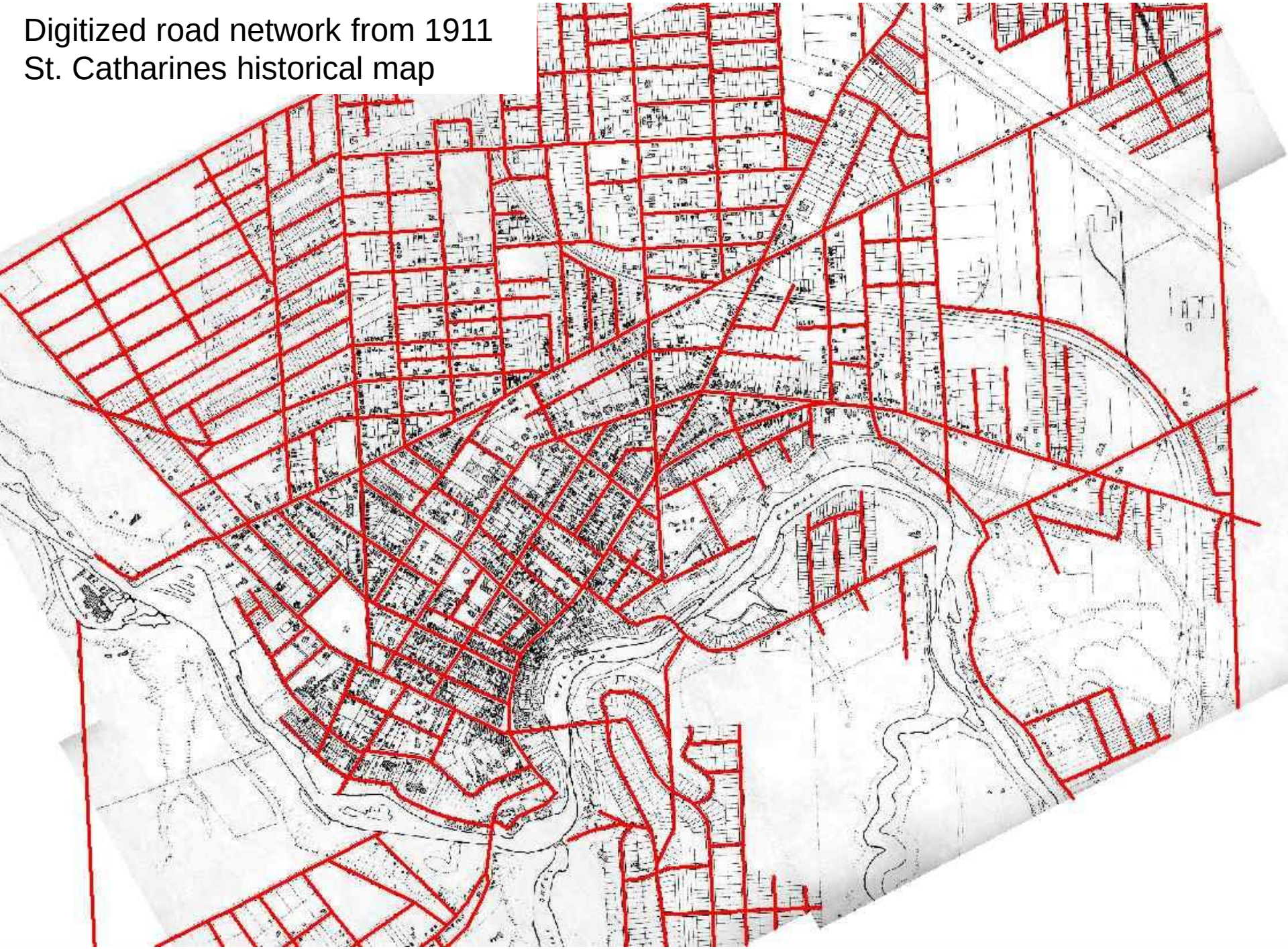
Recreated from an Original Fire Insurance Plan using ArcGIS



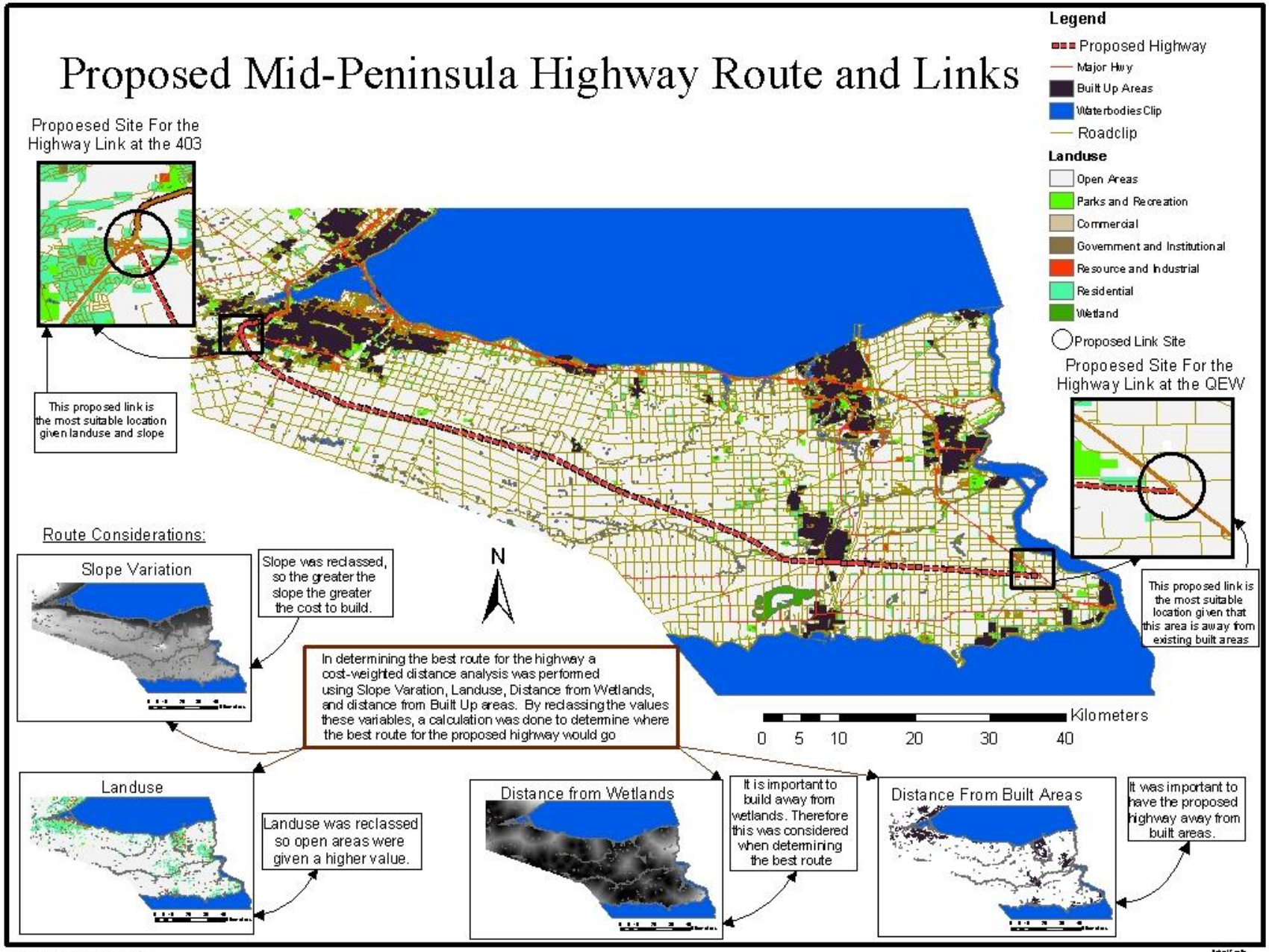
A Digital Humanities Project

Map prepared by: Joanne Humphries and Mitch Copeland, 2010
Layout prepared by: Brock University Map Library, 2010

Digitized road network from 1911
St. Catharines historical map



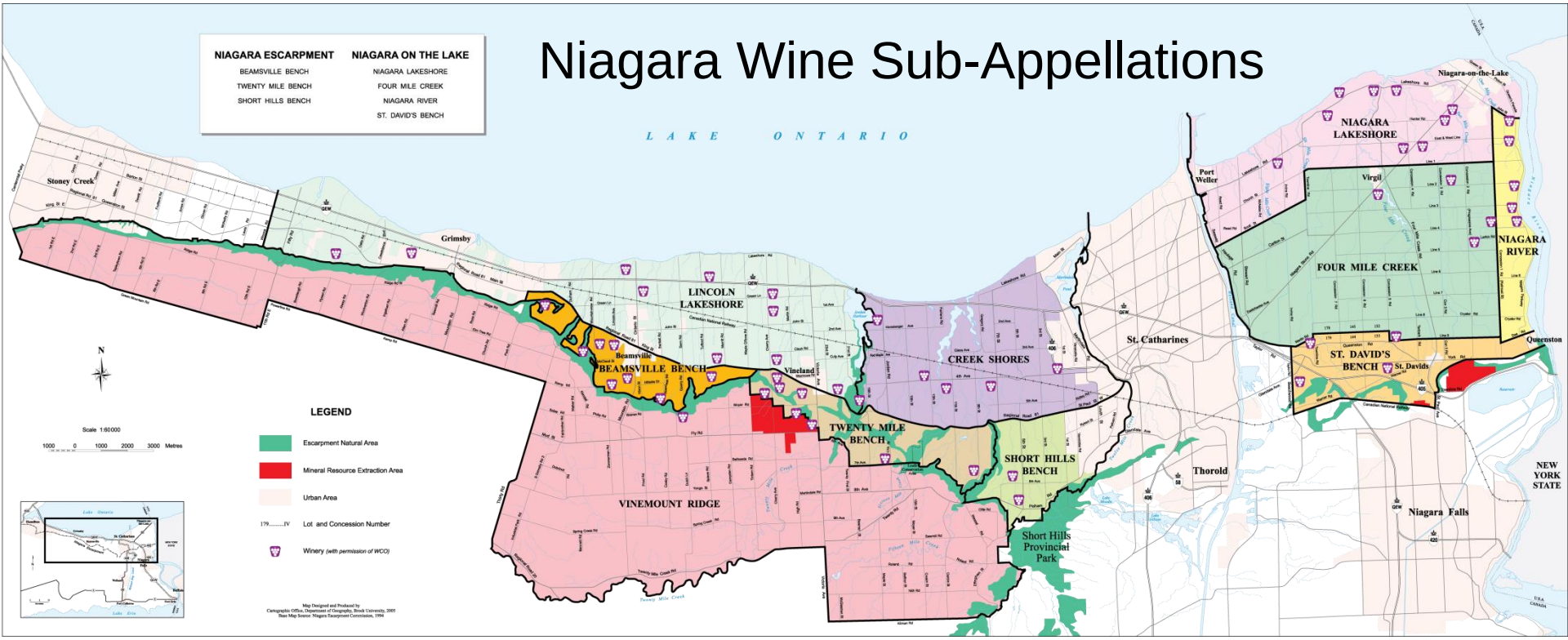
TRANSPORTATION / URBAN PLANNING



Statistics Canada, 1996

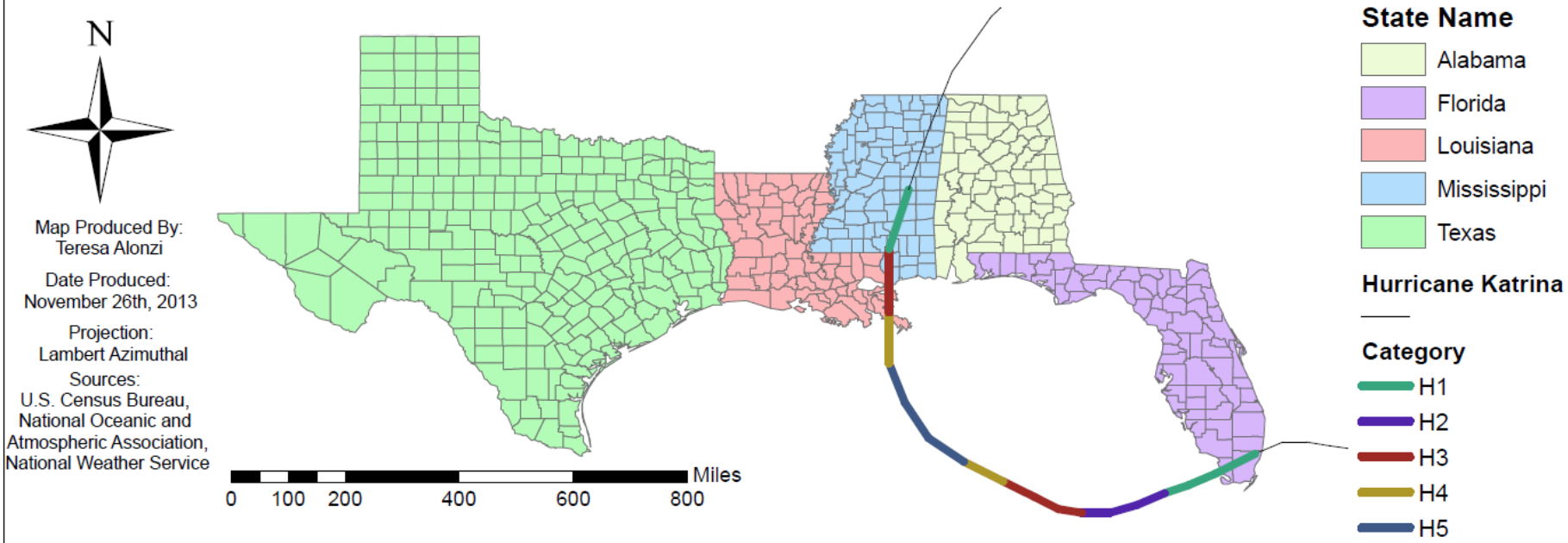
TOURISM / RECREATION PLANNING

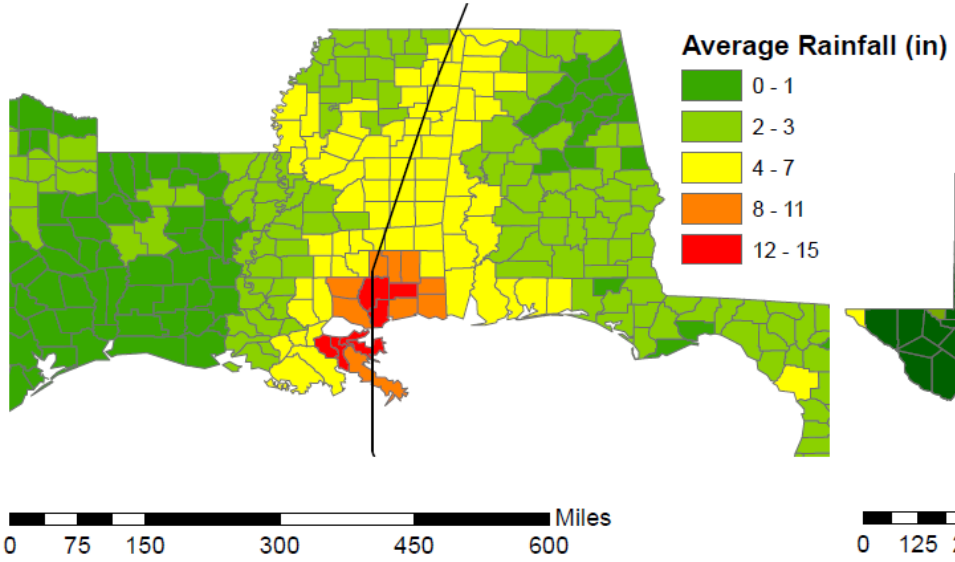
VITICULTURE / AGRICULTURE

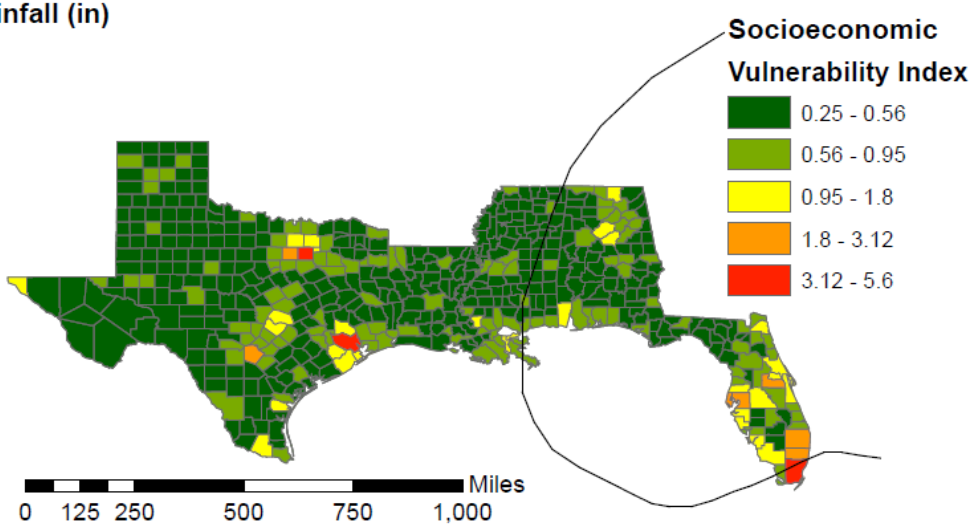


Research by Prof. Tony Shaw, Dept. of Geography

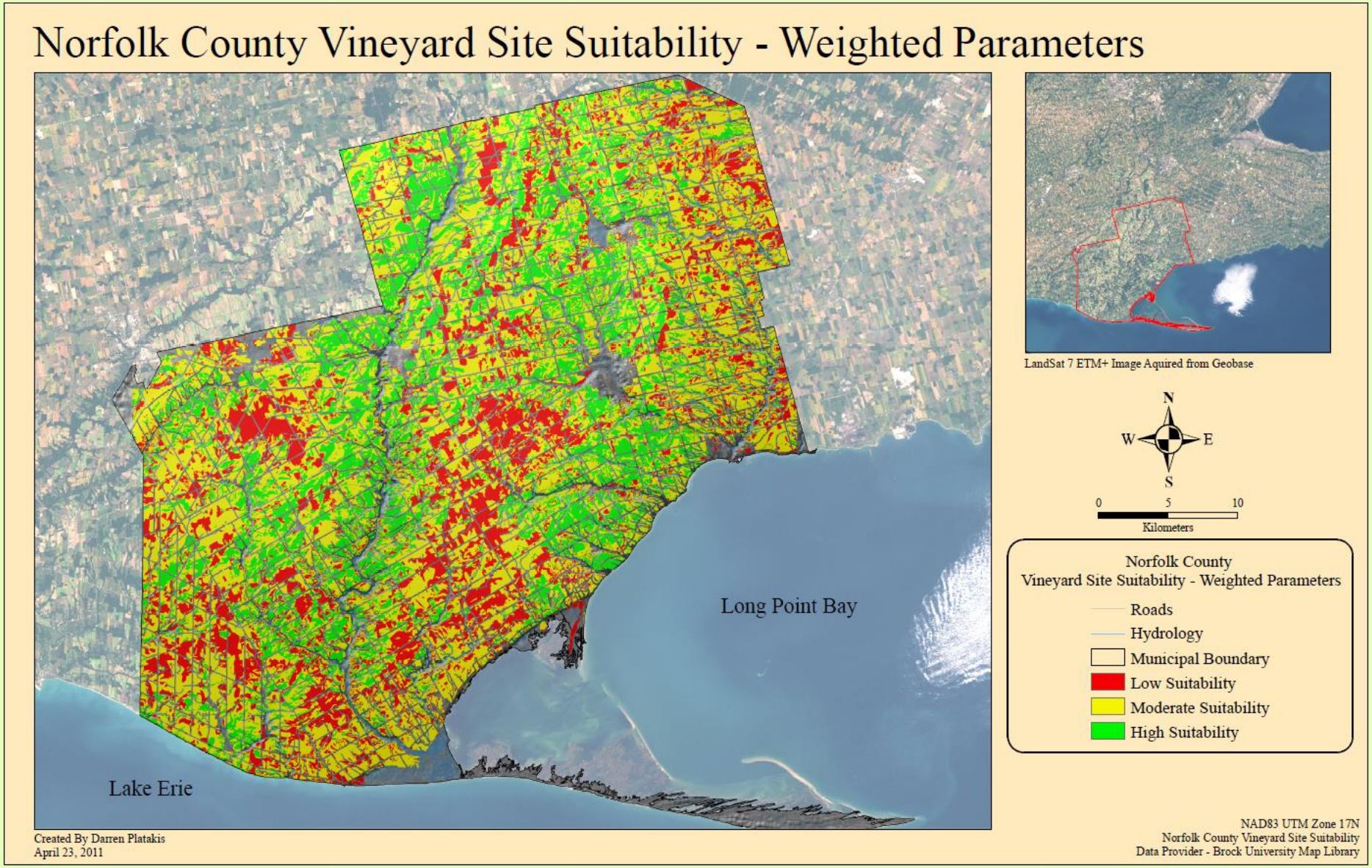
Huricane Katrina and Socioeconomic Vulnerability of the Gulf Coast







AGRICULTURE



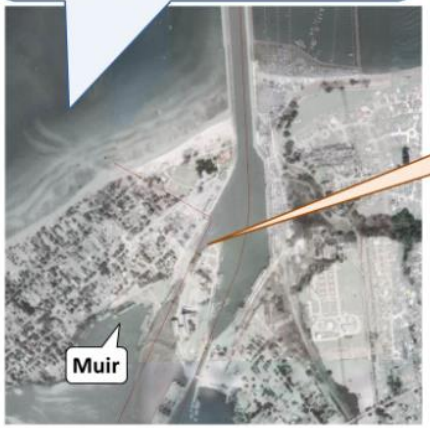
Brock University Map Library

Historic Welland Canals Corridor – visualizing the past!

Building on Niagara Region's *GIS* data of canal paths and points of interest, a visualization tool is being created that merges old documents with new technology. A combination of historic air photos, maps, and photos held in Brock's collection utilizes Google Earth to provide an interactive tool for exploring the historic canals.

1839 map overlay of Port Dalhousie shows the First Welland Canal entrance; significant shoreline evolution.

1934 air photo overlay reveals underwater remnants of the canal entrance piers; ship activity at Muir Shipbuilding, Port Dalhousie.



Lock 3, Second Canal
St. Catharines, c1845

Lock One of the Second Canal, Port Dalhousie, postcard c.1860

Entrance to the Grand Trunk Rail Tunnel, photo c1888
(aka Blue Ghost Tunnel)

View of the Third Canal looking north to Lock 17 and the iron bridge, postcard c1880

1934 air photo overlay of the Third Welland Canal parklands. Spectacular views of locks 11-22. Area of potential tourism development!

Who uses GIS at Brock?

Geography

Biology

Health Sciences

Earth Sciences

Economics

Political Science

Tourism and Environment

History

CCOVI

Digital Humanities