



# Sustainable Food Systems

## Addendum: Agricultural Maps of Midwestern Ontario

August 12, 2012

Compiled By: Roxana Roshon (Ph.D.)

GIS By: Steve Gautreau, Gautreau Cartography

A Project of the London Training Centre

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## 1. Overview of Maps

The initial mandate of this report was focused on nine counties in Midwestern Ontario, including Bruce, Grey, Elgin, Middlesex, Oxford, Huron, Perth, Waterloo and Wellington. Even though the catchment area of this research was extended to include a total of fifteen counties partway through the project, the following maps cover only the original nine counties.

The maps of particular interest to sustainable food and agriculture in Midwestern Ontario include:

- Appendix A: temperature isotherms from 1981 to 2010 (Environment Canada, 2012; MNR, 2012).
- Appendix B: maps of existing agricultural commodities grown in the nine counties within our study area (MNR, 2012; OMAFRA, 1983).
- Appendix C: a map of existing farmers' markets in the nine counties (MNR, 2012).

In addition, a province wide map of Farmers' Markets exists on-line (Farmers' Markets Ontario, 2012). It is realized that neither database is complete as there is a new small farmers' market in Markdale in Grey County (Foodlink Grey & Bruce, 2012) and one in Lucknow in Bruce county (Explore the Bruce, 2012) that do not appear on these maps. If other farmers' markets are not on these maps, please let us know so that the databases can be updated.

- Appendix D: maps of existing soil classification in Midwestern Ontario (MNR, 2012).
- Appendix E: maps providing an assessment of agricultural capabilities (MNR, 2012), based on the Canada Land Inventory (CLI).

Transitioning to other potential agricultural systems includes examining the combination of soil type, land classification and climatic conditions. In the CLI system, there are seven capability classes. Soil quality descends from Class 1, which is prime agricultural land, to Class 7 soils which have no agricultural capability for common field crops. Class 1 soils have no significant limitations, while Classes 2 through 7 soils have one or more significant limitations (OMAFRA, 2011).

- Appendix F: maps of current soil drainage characteristics of Midwestern Ontario.

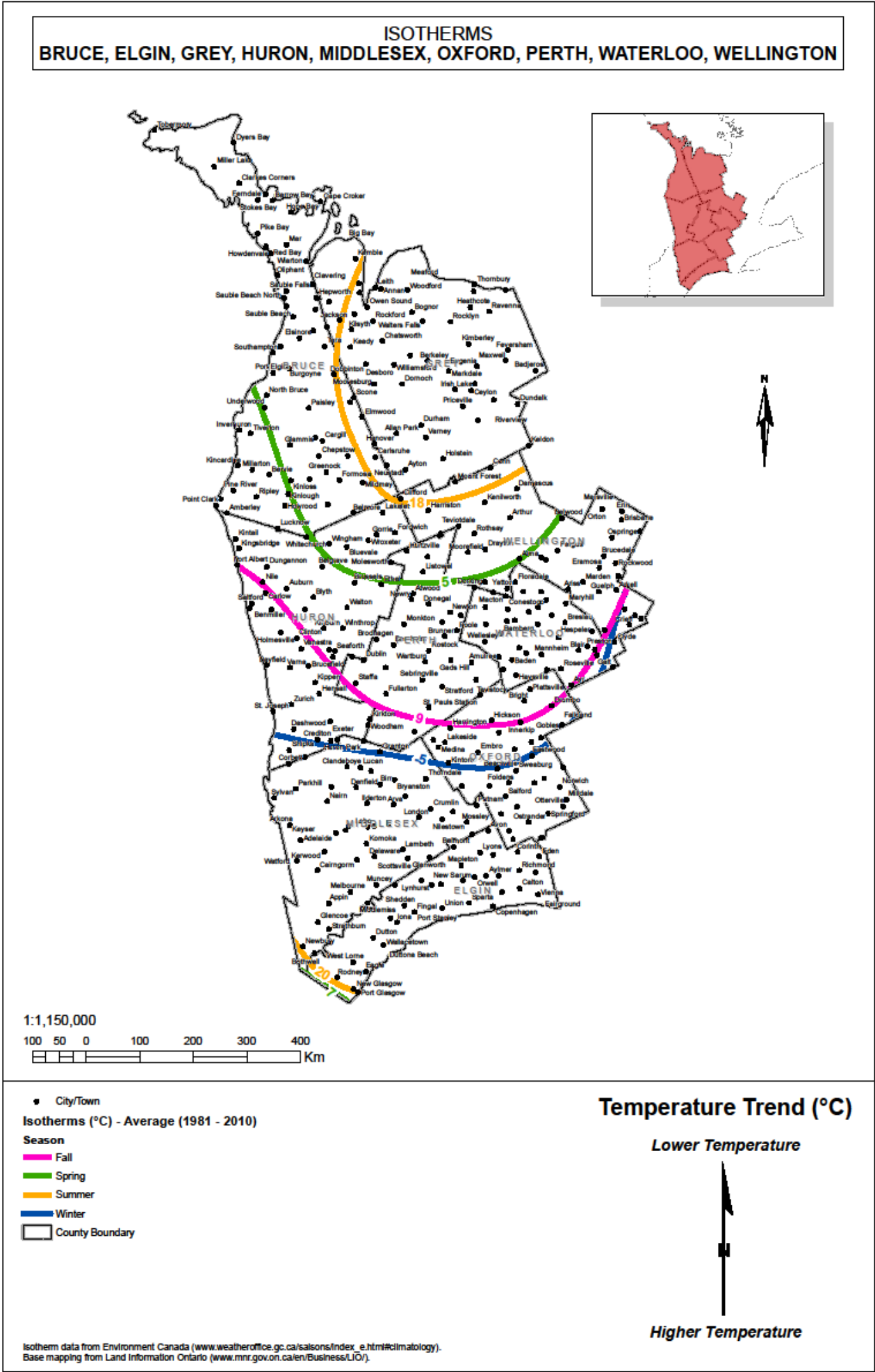
Proper water drainage from soil is an important characteristic of a successful agroecological system.

- Appendix G: current temperature isotherms connected to plant hardiness (MNR, 2012, NRC, 2003).

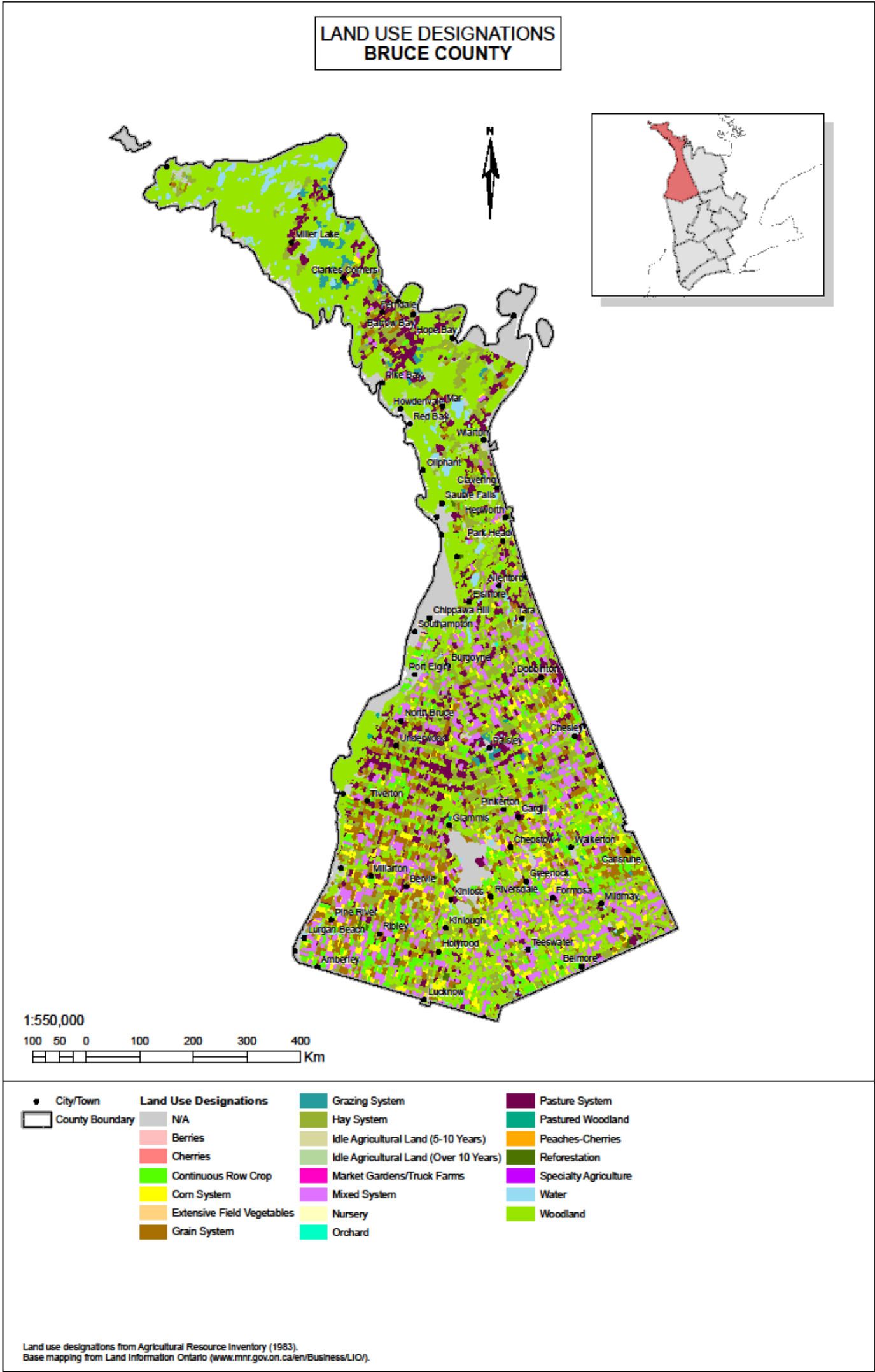
For successful establishment of perennial crops, plant hardiness data is considered. This provides an indication of the average climatic conditions and altitude. These zones indicate where different plant species are most likely to survive (NRC, 2003). It is likely that Environment Canada will revise the plant hardiness zones within the next couple of years.

A map of co-operatives located in Midwestern Ontario was not produced for this report because "The Local Organic Food Co-ops Network" has generated a map and interactive website of co-ops across Ontario (LOFC Network, 2012).

Appendix A: Temperature Isotherm Maps from 1981 to 2010

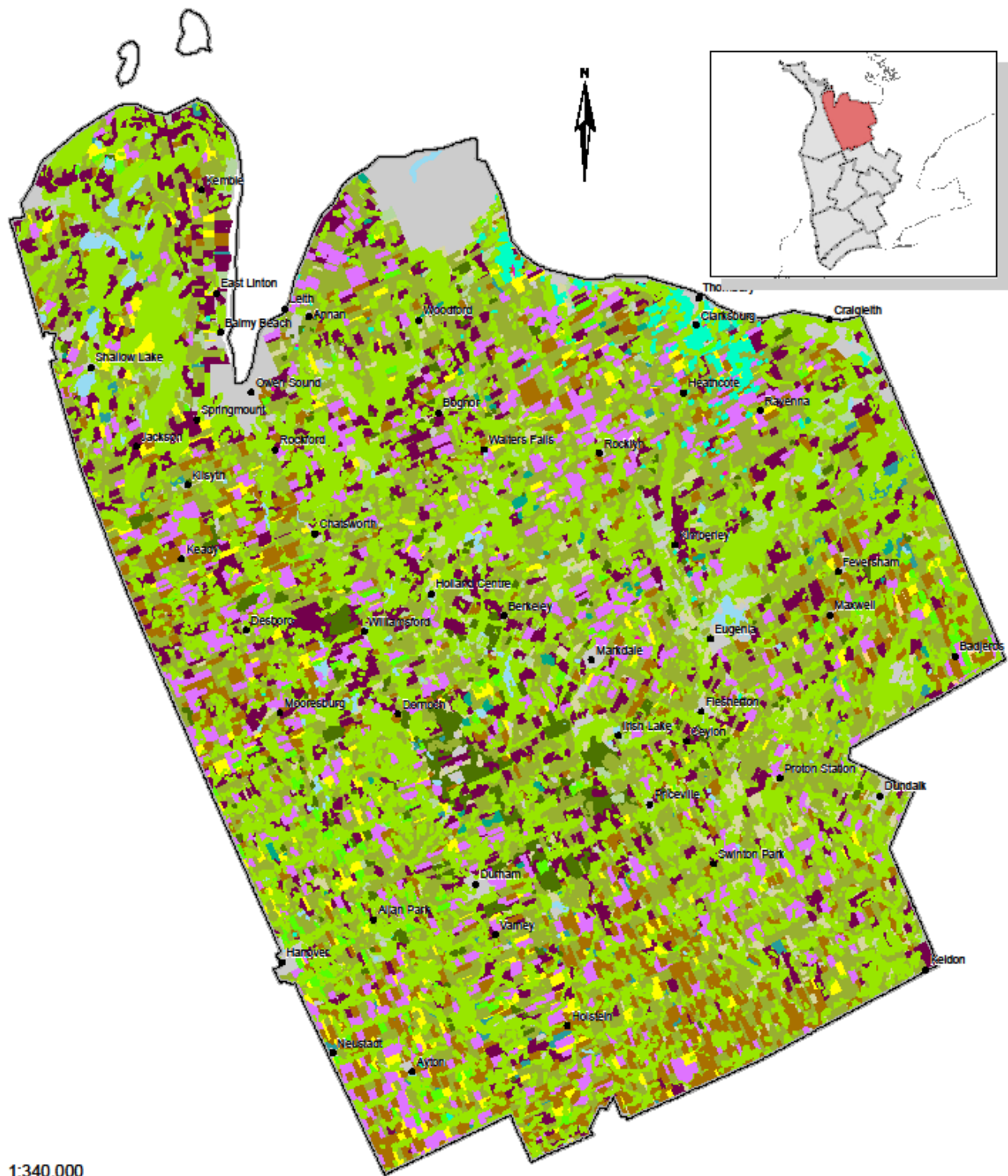


Appendix B: Maps of Current Agricultural Land Uses in Midwestern Ontario





# LAND USE DESIGNATIONS GREY COUNTY



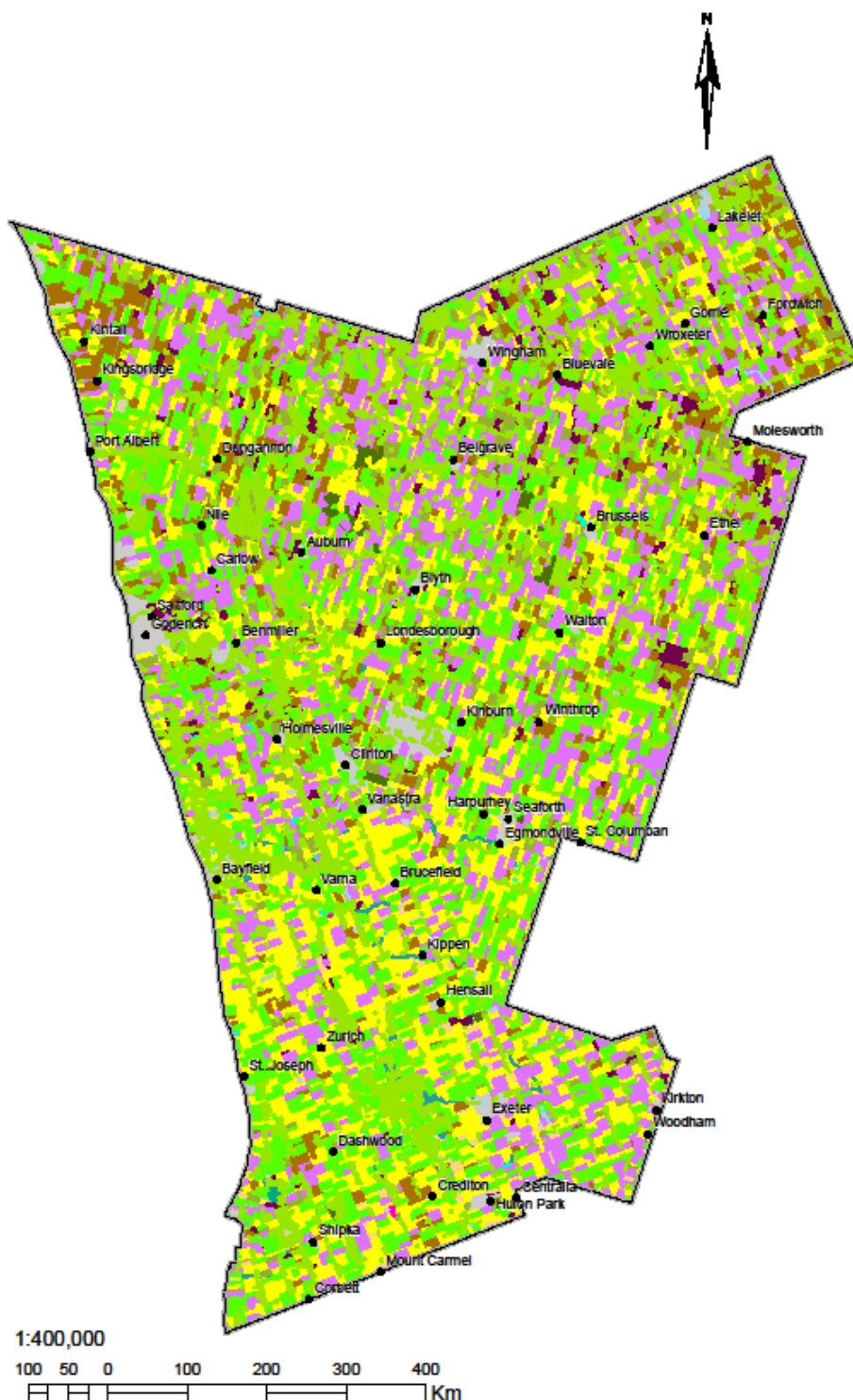
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- |  |   |   |  |
|--|---|---|--|
| <ul style="list-style-type: none"> <li>City/Town</li> <li>County Boundary</li> </ul> | <b>Land Use Designations</b> <ul style="list-style-type: none"> <li>N/A</li> <li>Berries</li> <li>Cherries</li> <li>Continuous Row Crop</li> <li>Corn System</li> <li>Extensive Field Vegetables</li> <li>Grain System</li> </ul> | <ul style="list-style-type: none"> <li>Grazing System</li> <li>Hay System</li> <li>Idle Agricultural Land (5-10 Years)</li> <li>Idle Agricultural Land (Over 10 Years)</li> <li>Market Gardens/Truck Farms</li> <li>Mixed System</li> <li>Nursery</li> <li>Orchard</li> </ul> | <ul style="list-style-type: none"> <li>Pasture System</li> <li>Pastured Woodland</li> <li>Peaches-Cherries</li> <li>Reforestation</li> <li>Specialty Agriculture</li> <li>Water</li> <li>Woodland</li> </ul> |
|--|---|---|--|

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosario\mod\Final map\Grey\_Land Use.mxd) 2003/2012-9-51:08 AM

# LAND USE DESIGNATIONS HURON COUNTY

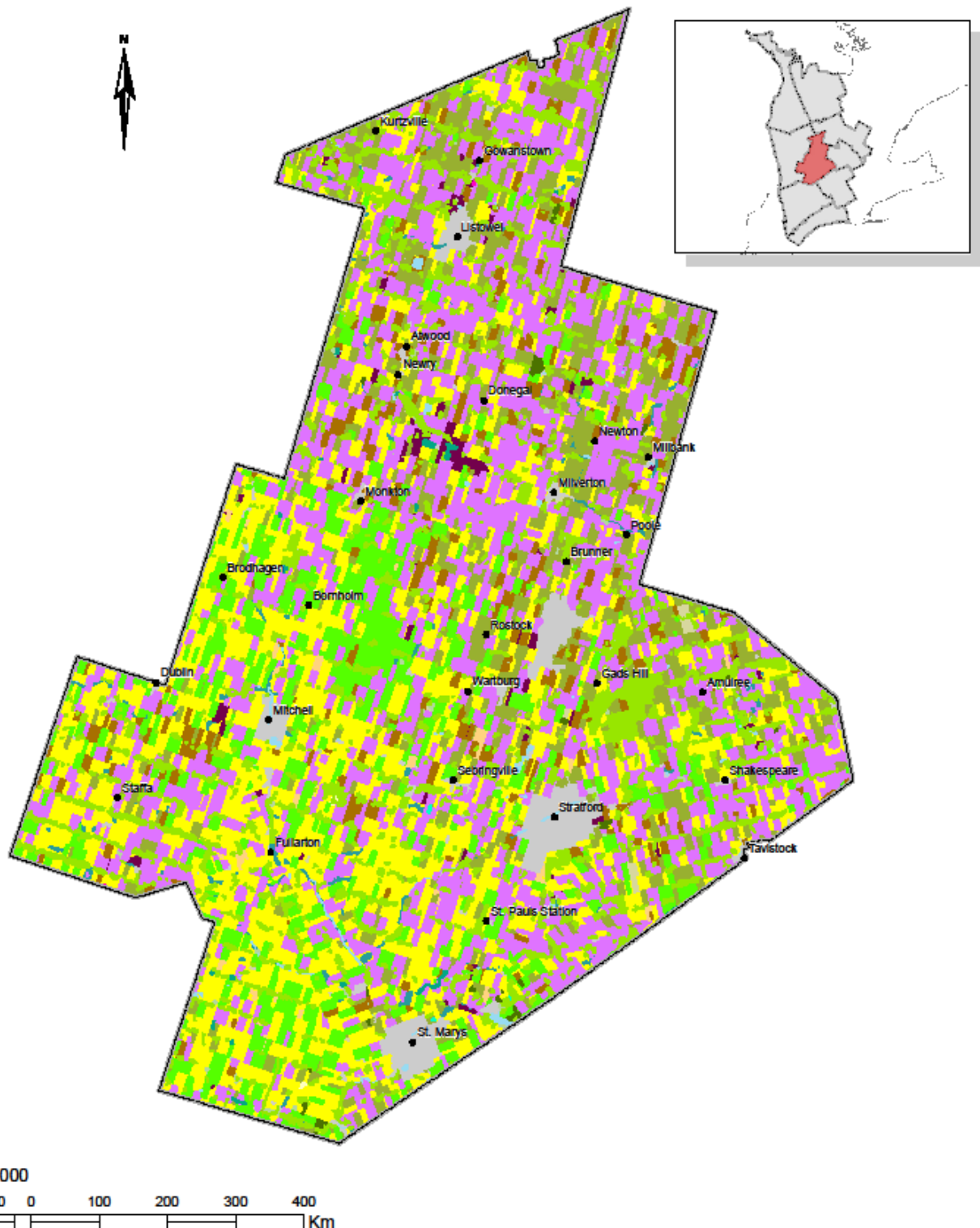


|                   |                              |  |                       |
|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> | Grazing System                         | Pasture System        |
| □ County Boundary | N/A                          | Hay System                             | Pastured Woodland     |
|                   | Berries                      | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Cherries                     | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Continuous Row Crop          | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Corn System                  | Mixed System                           | Water                 |
|                   | Extensive Field Vegetables   | Nursery                                | Woodland              |
|                   | Grain System                 | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rozana\mod\Final map\Huron\_Land Use.mxd) 2003/2012-8:53:16 AM

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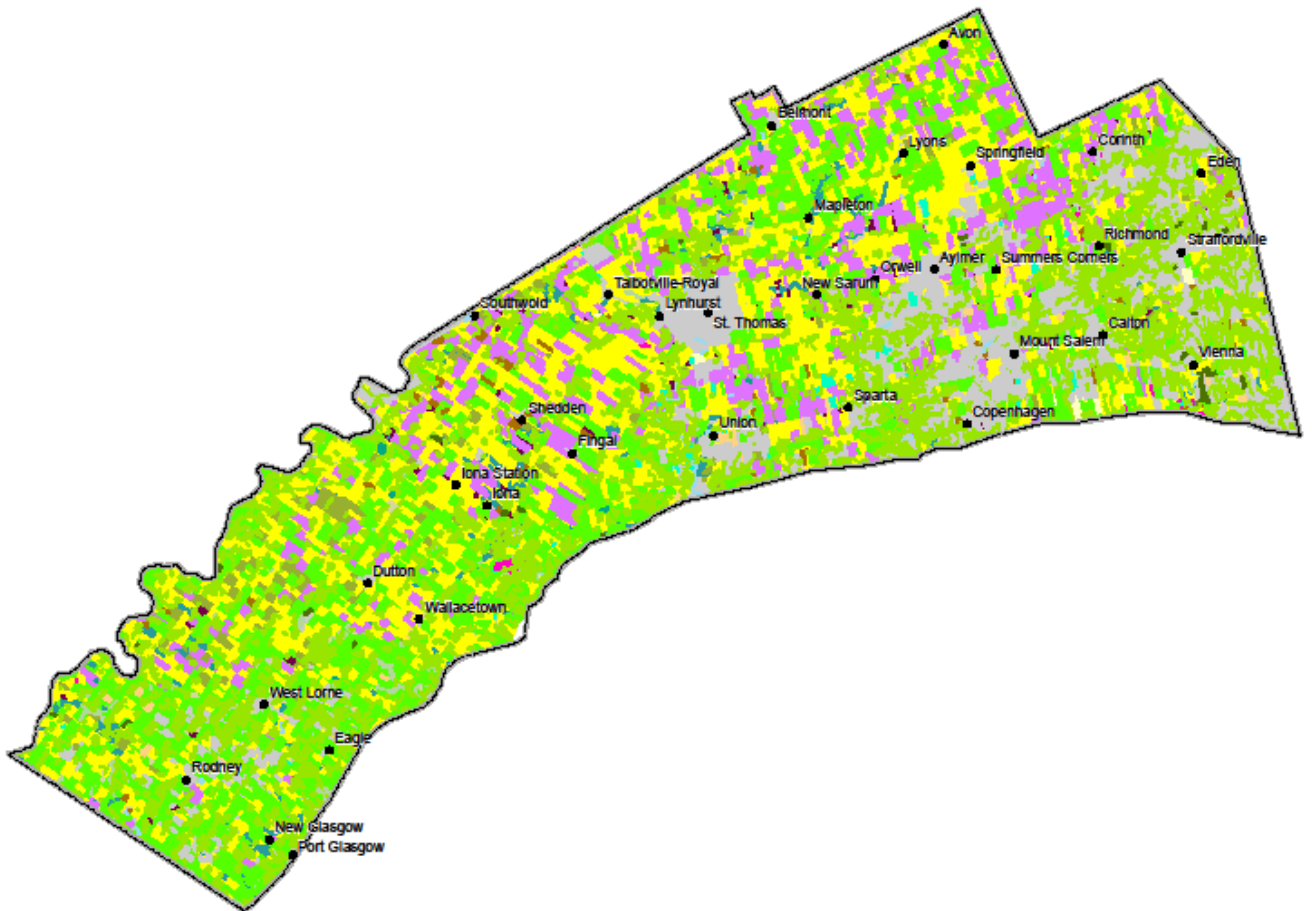
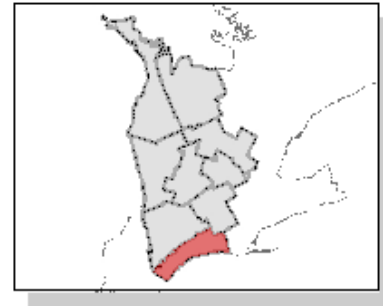


Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

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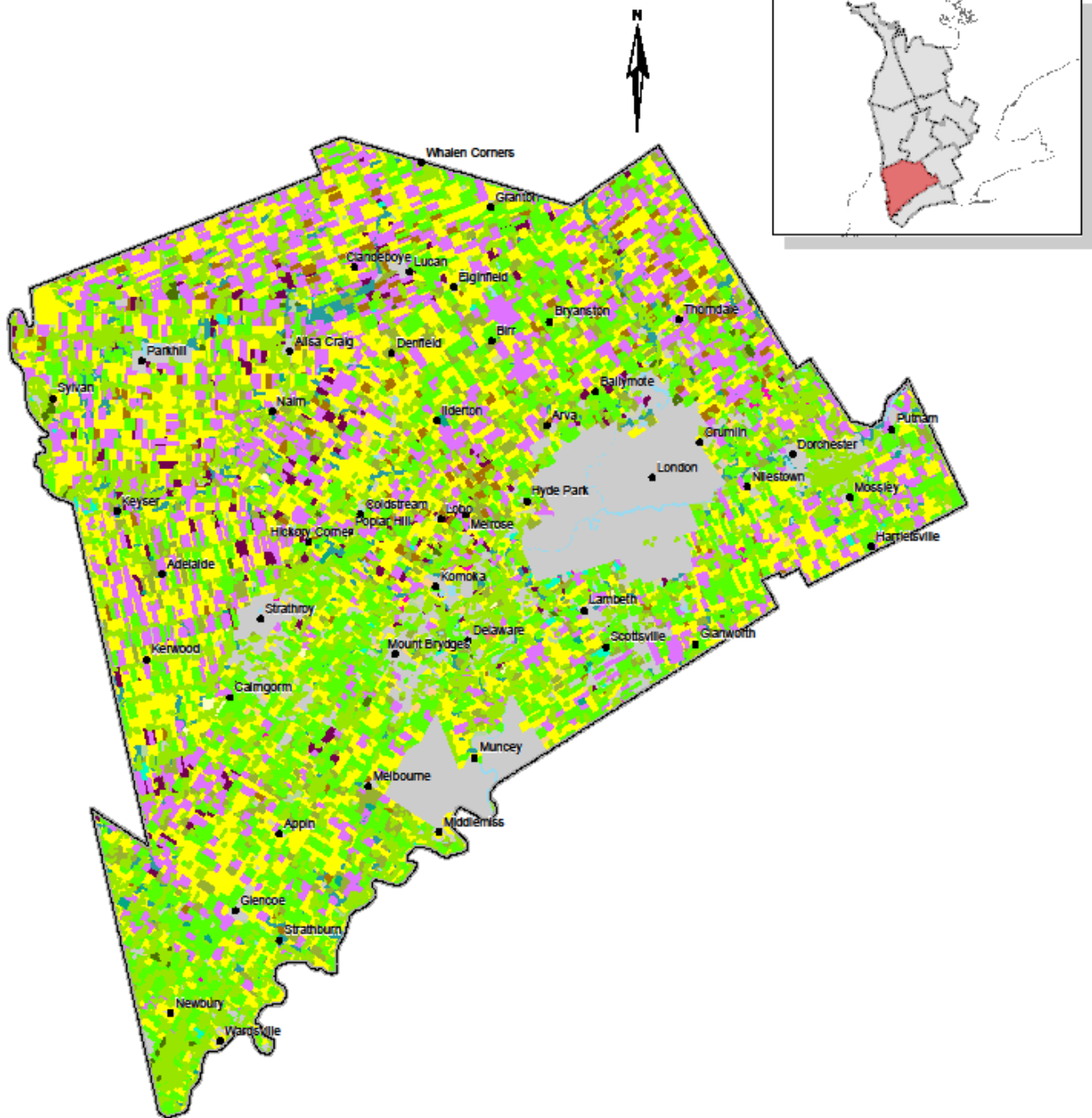
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|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> | Grazing System                         | Pasture System        |
| □ County Boundary | N/A                          | Hay System                             | Pastured Woodland     |
|                   | Berries                      | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Cherries                     | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Continuous Row Crop          | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Corn System                  | Mixed System                           | Water                 |
|                   | Extensive Field Vegetables   | Nursery                                | Woodland              |
|                   | Grain System                 | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Elgin\_Land Use.mxd) 2012/09/12-9:40:15 AM

# LAND USE DESIGNATIONS MIDDLESEX COUNTY



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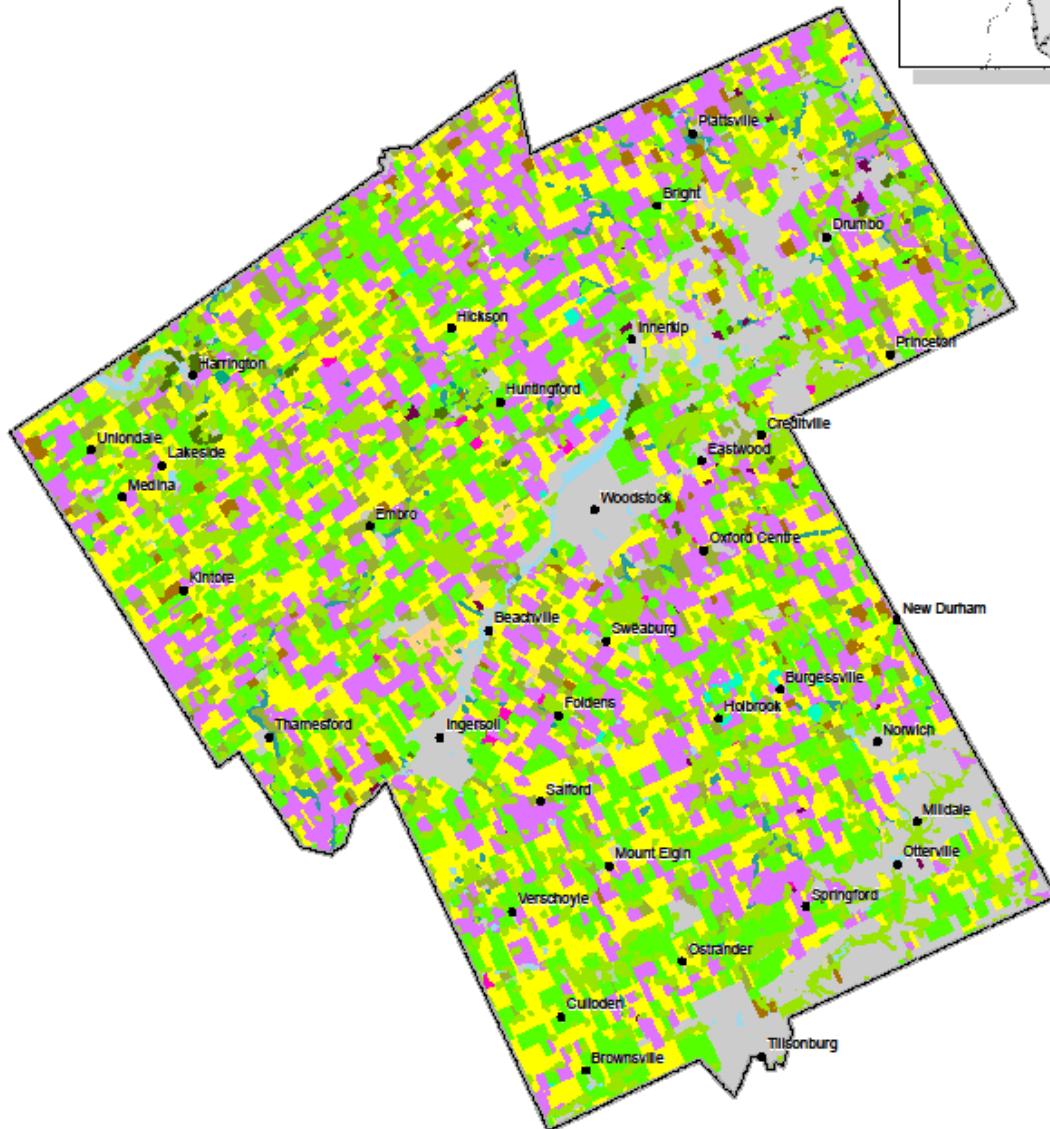
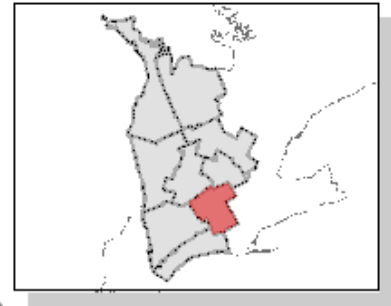
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|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> | Grazing System                         | Pasture System        |
| □ County Boundary | N/A                          | Hay System                             | Pastured Woodland     |
|                   | Berries                      | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Cherries                     | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Continuous Row Crop          | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Corn System                  | Mixed System                           | Water                 |
|                   | Extensive Field Vegetables   | Nursery                                | Woodland              |
|                   | Grain System                 | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Middlesex\_Land Use.mxd) 20/03/2012-0:55:23 AM

# LAND USE DESIGNATIONS OXFORD COUNTY



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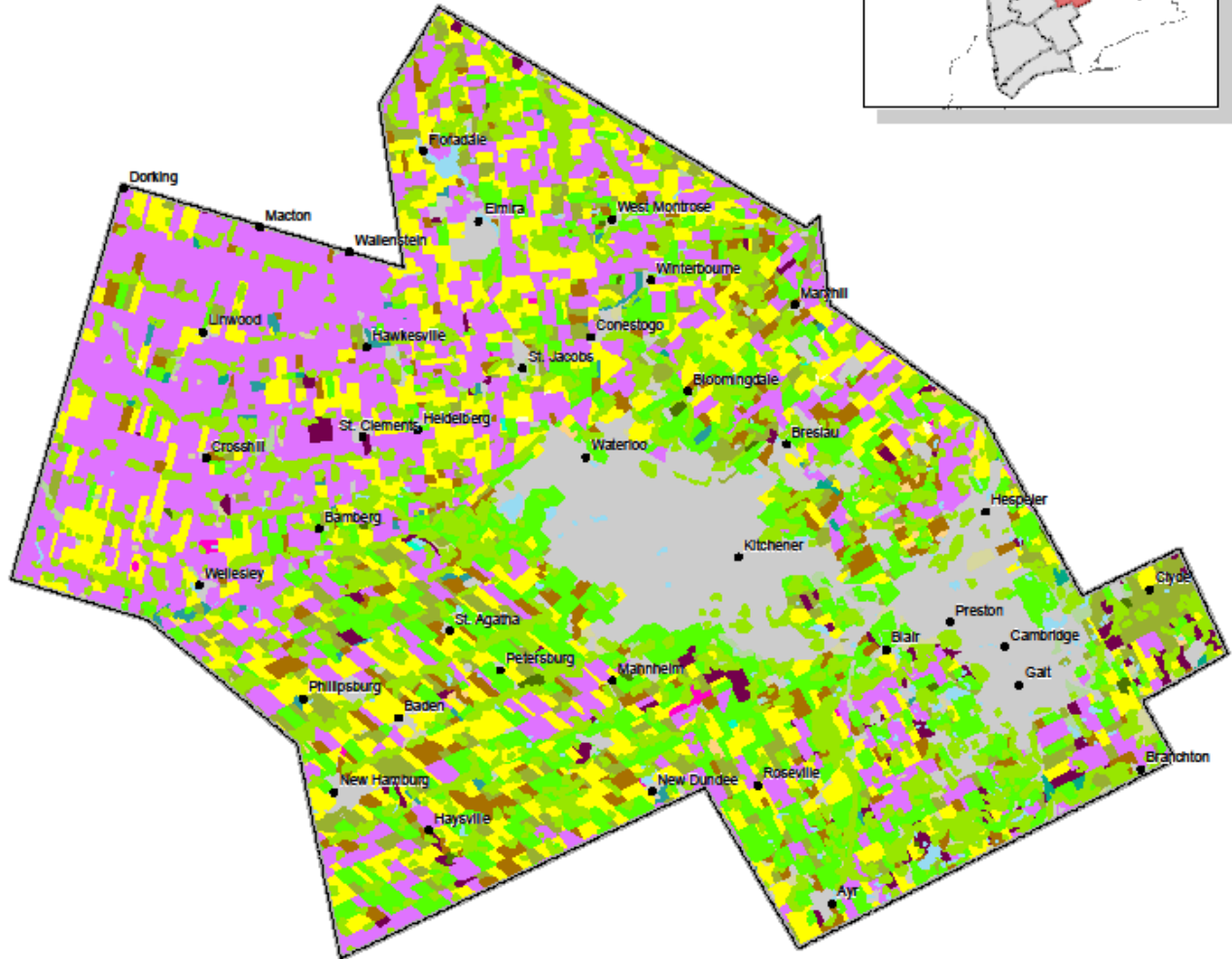
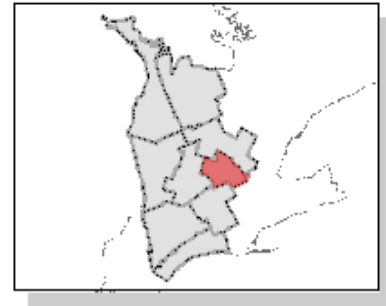
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|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> |  |                       |
| □ County Boundary | NA                           | Grazing System                         | Pasture System        |
|                   | Berries                      | Hay System                             | Pastured Woodland     |
|                   | Cherries                     | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Continuous Row Crop          | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Corn System                  | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Extensive Field Vegetables   | Mixed System                           | Water                 |
|                   | Grain System                 | Nursery                                | Woodland              |
|                   |                              | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Oxford\_Land Use.mxd) 20/09/2012-9:57:25 AM

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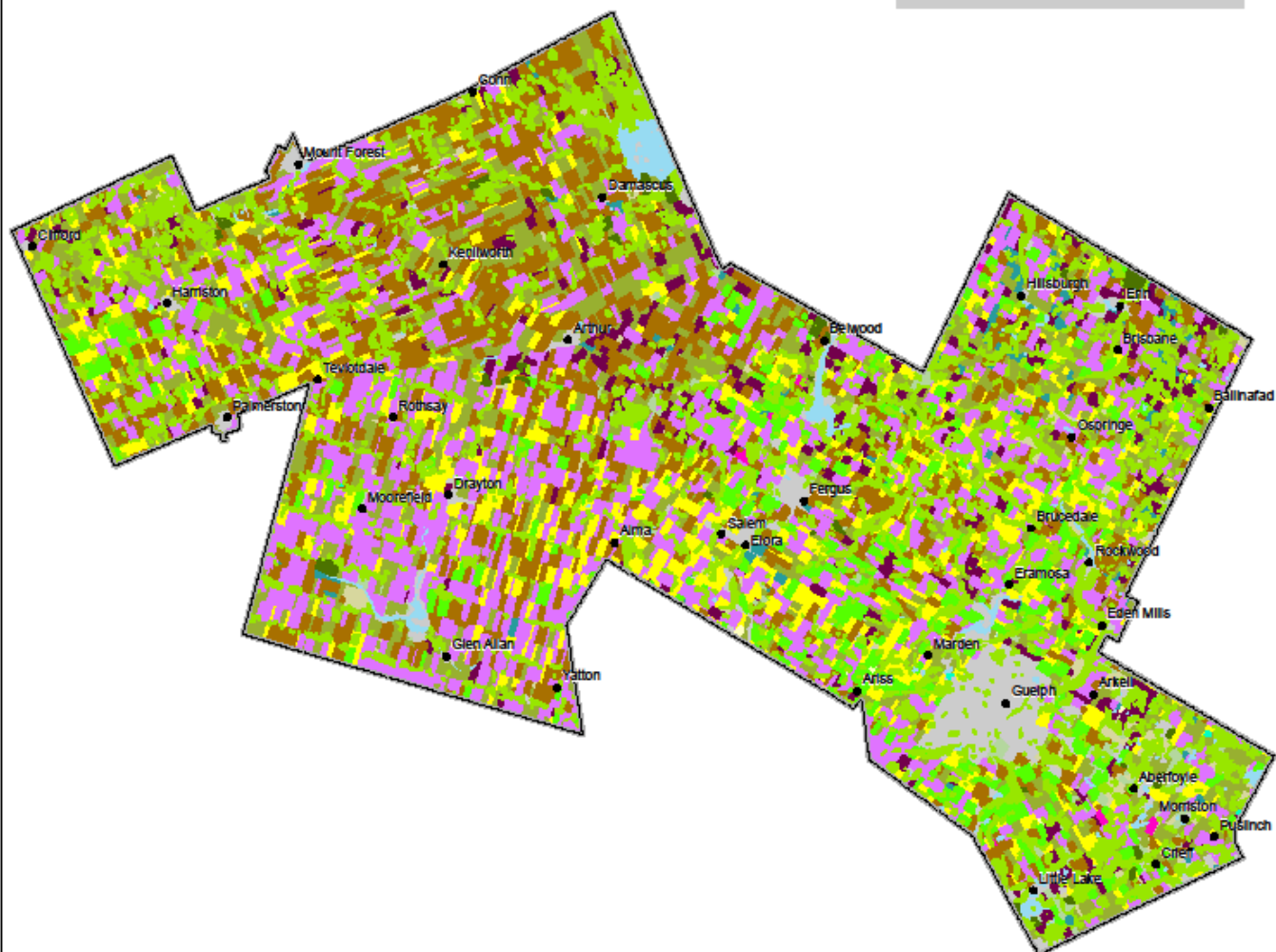
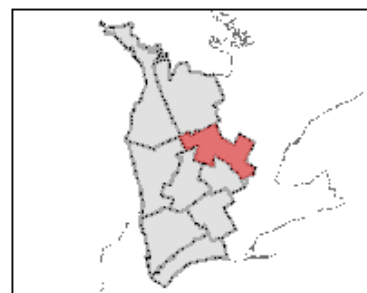
|                   |                              |  |                       |
|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> | Grazing System                         | Pasture System        |
| □ County Boundary | N/A                          | Hay System                             | Pastured Woodland     |
|                   | Berries                      | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Cherries                     | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Continuous Row Crop          | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Corn System                  | Mixed System                           | Water                 |
|                   | Extensive Field Vegetables   | Nursery                                | Woodland              |
|                   | Grain System                 | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Final map\Waterloo\_Land Use.mxd) 2003/2012-10-02 08 AM



# LAND USE DESIGNATIONS WELLINGTON COUNTY



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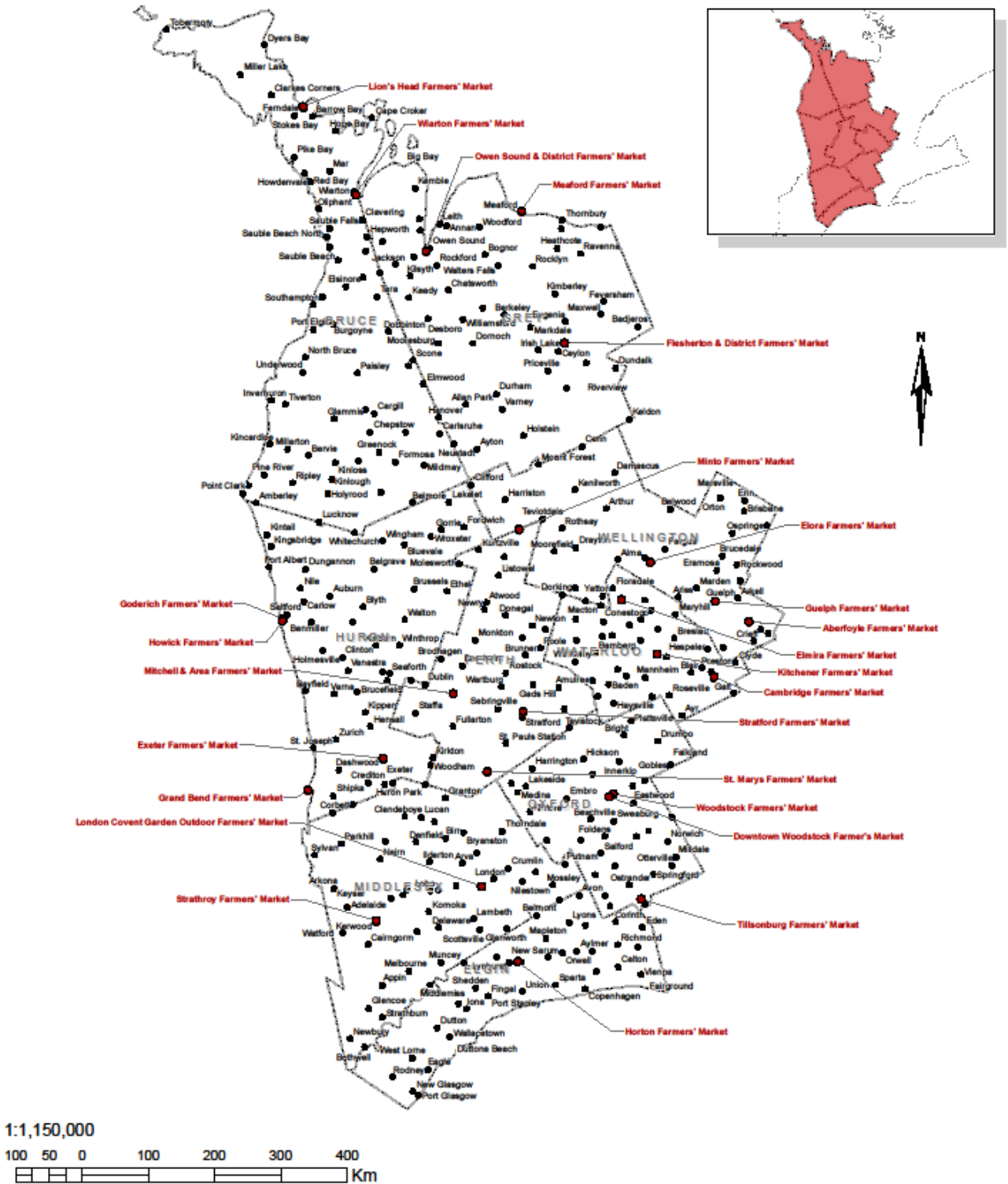
|                   |                              |  |                       |
|-------------------|------------------------------|--|-----------------------|
| • City/Town       | <b>Land Use Designations</b> | Grazing System                         | Pasture System        |
| □ County Boundary | N/A                          | Hay System                             | Pastured Woodland     |
|                   | Berries                      | Idle Agricultural Land (5-10 Years)    | Peaches-Cherries      |
|                   | Cherries                     | Idle Agricultural Land (Over 10 Years) | Reforestation         |
|                   | Continuous Row Crop          | Market Gardens/Truck Farms             | Specialty Agriculture |
|                   | Corn System                  | Mixed System                           | Water                 |
|                   | Extensive Field Vegetables   | Nursery                                | Woodland              |
|                   | Grain System                 | Orchard                                |                       |

Land use designations from Agricultural Resource Inventory (1983).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Final map\Wellington\_Land Use.mxd) 20/03/2012-10:04:07 AM

Appendix C: Locations of Existing Farmers' Markets in Midwestern Ontario

FARMERS' MARKETS  
BRUCE, ELGIN, GREY, HURON, MIDDLESEX, OXFORD, PERTH, WATERLOO, WELLINGTON

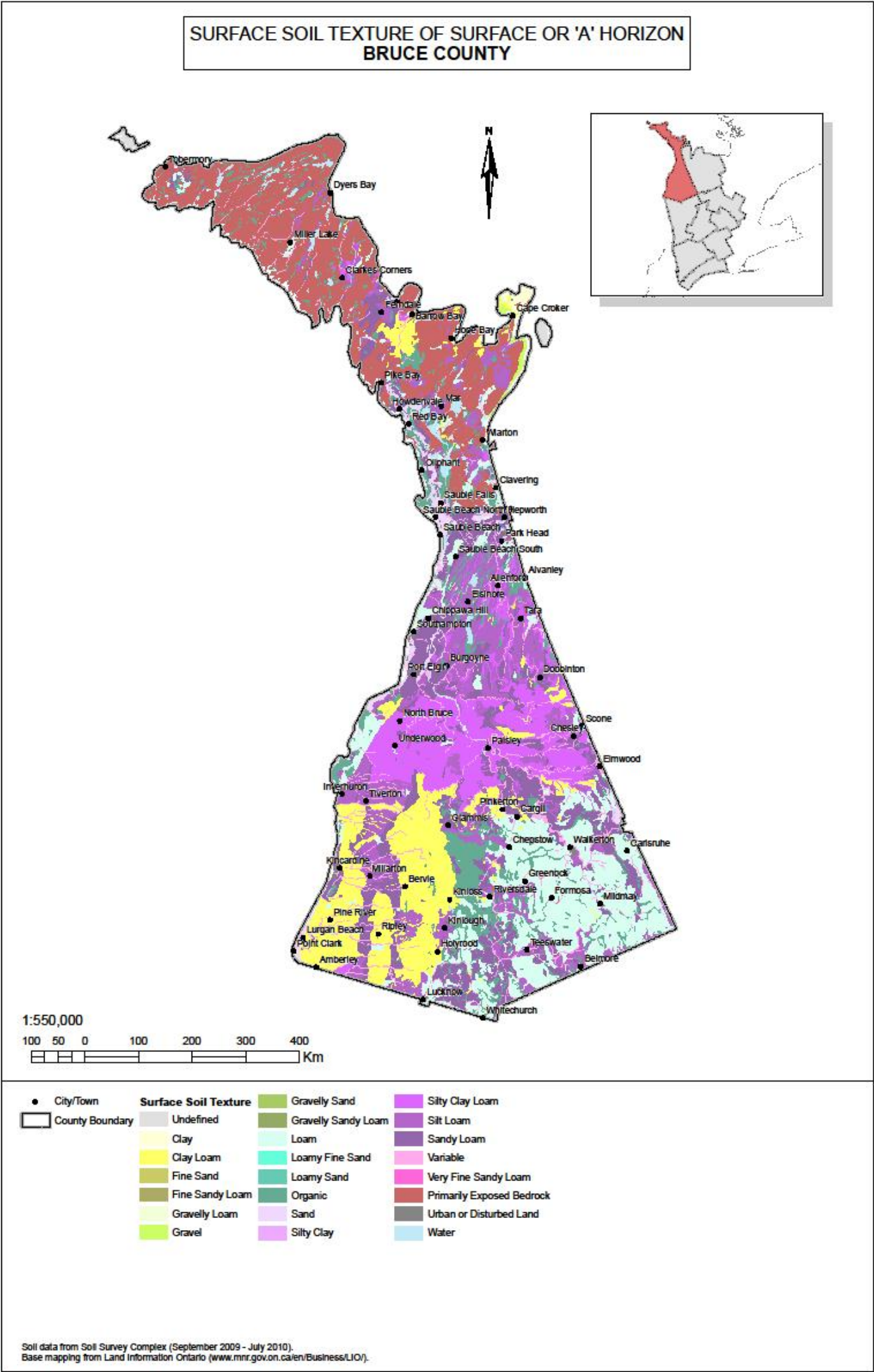


- City/Town
- Farmers' Market
- County Boundary

Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

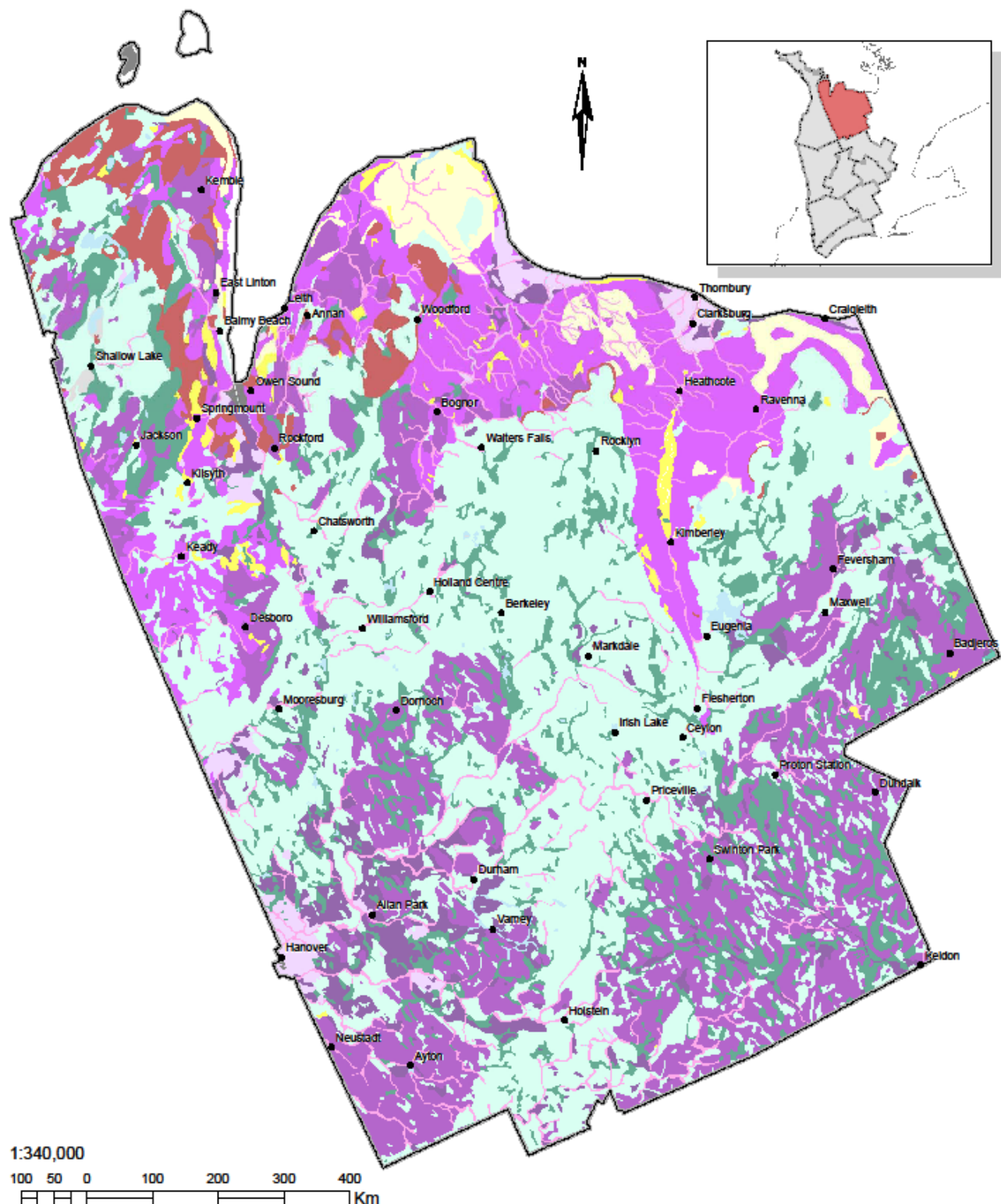
Map Document (D:\PROJECTS\Rozana\mod\Final maps\All\_Farmers Markets.mxd) 20/03/2012-9:43:08 AM

Appendix D: Maps of Surface Soil Texture in Midwestern Ontario





# **SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON GREY COUNTY**



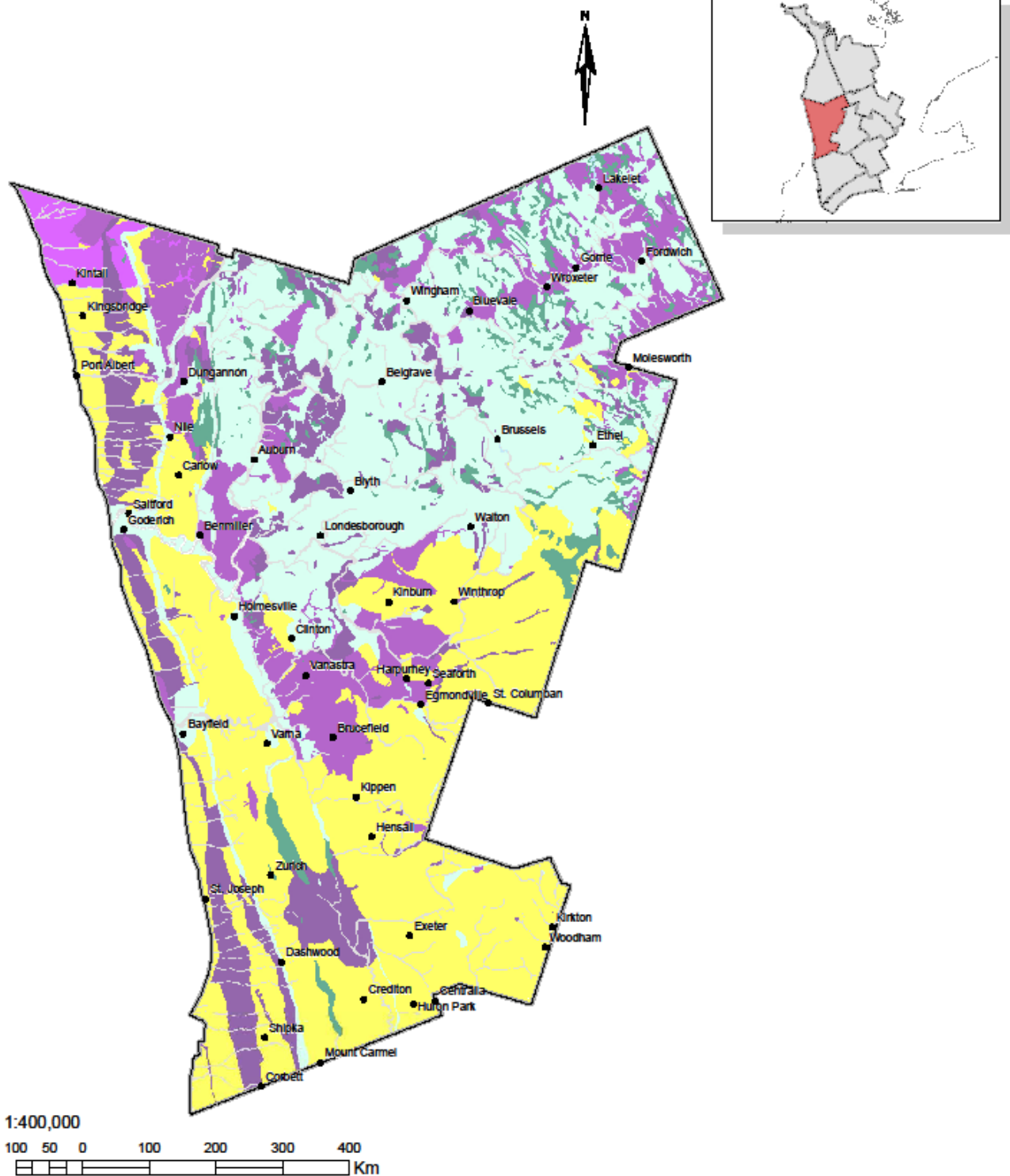
|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Grey\_Soil Composition.mxd) 2003/2012-9:51:37 AM



**SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON**  
**HURON COUNTY**

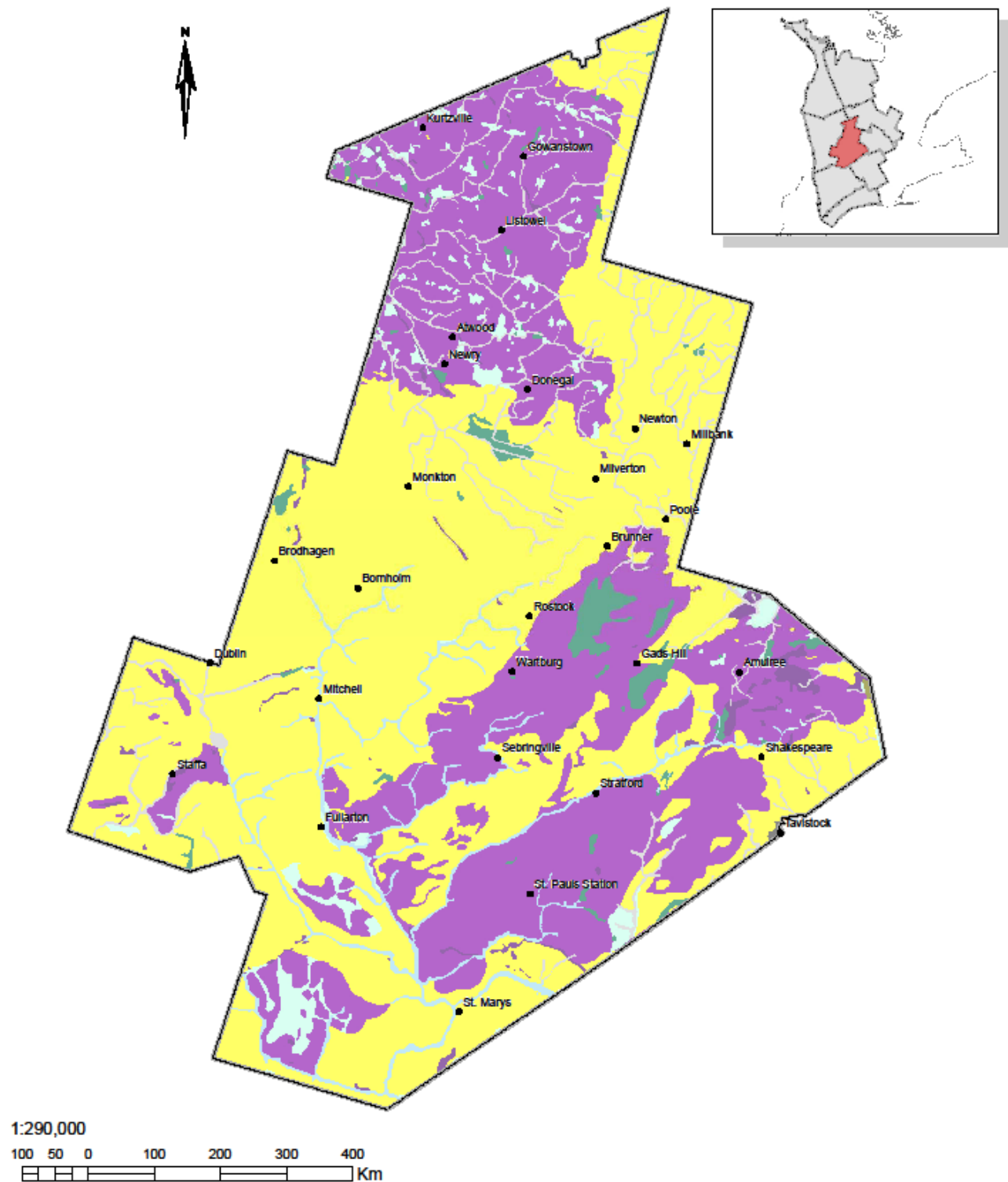


|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document (D:\PROJECTS\Rosamand\Final map\Huron\_Soil Composition.mxd) 20/03/2012-9:53:49 AM

# **SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON PERTH COUNTY**

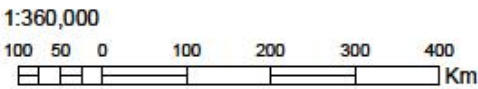
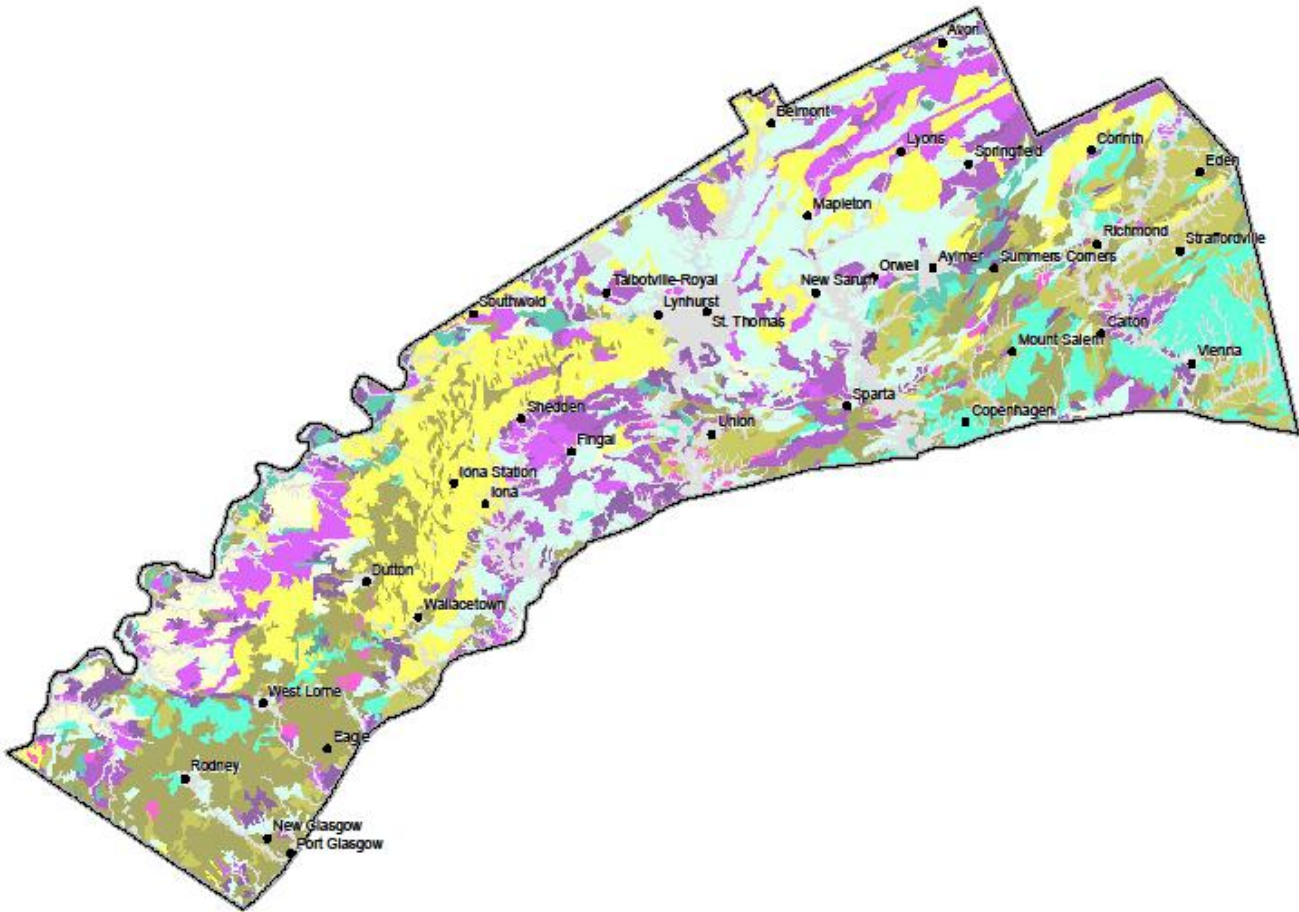
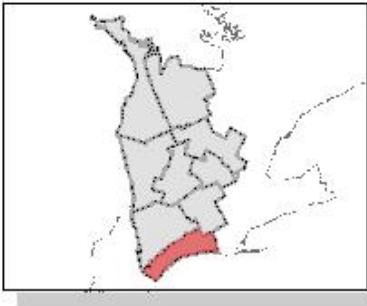


|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Perth\_Soil Composition.mxd) 20/03/2012--10:00:15 AM

# SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON ELGIN COUNTY

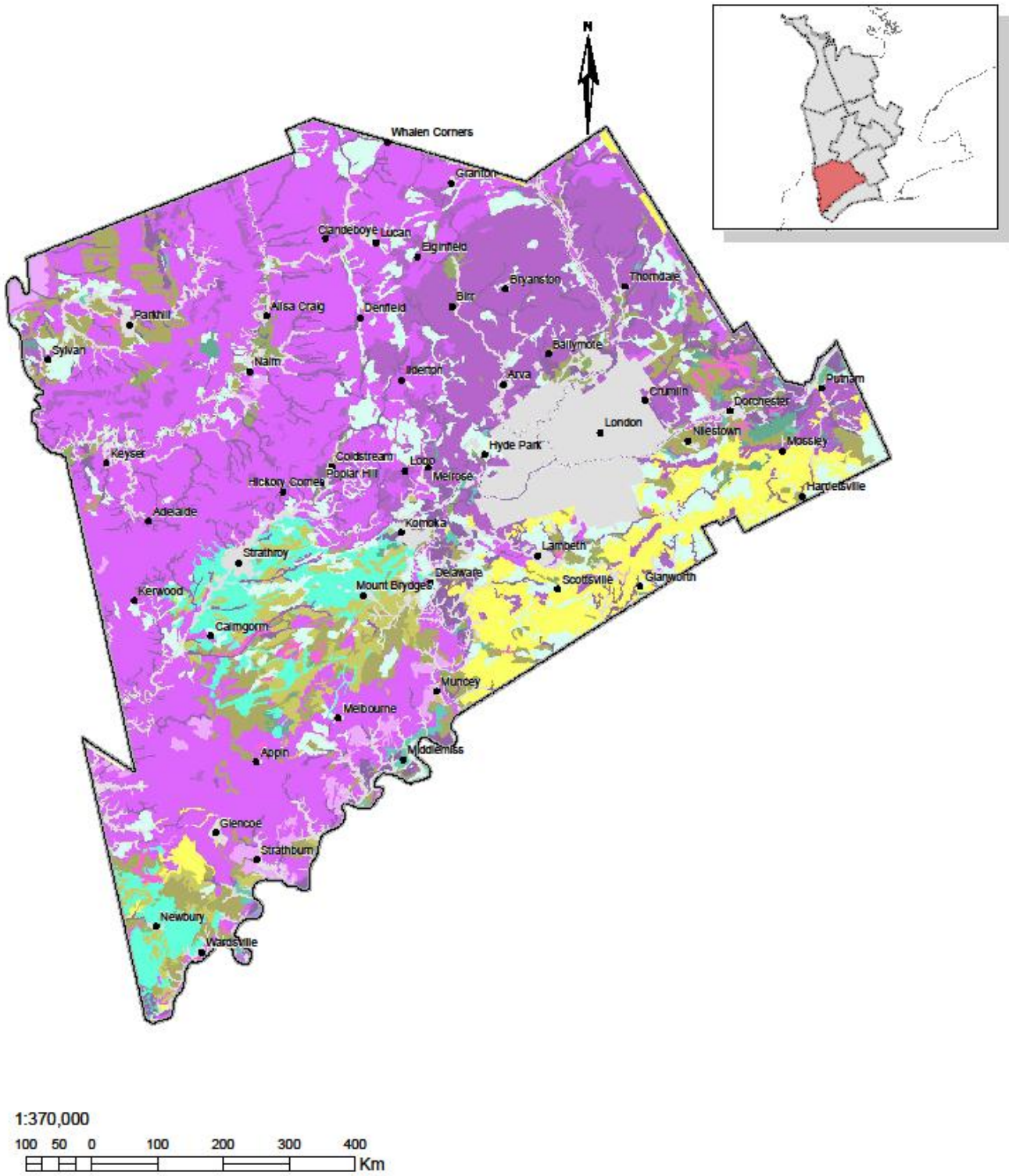


|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).



# **SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON MIDDLESEX COUNTY**

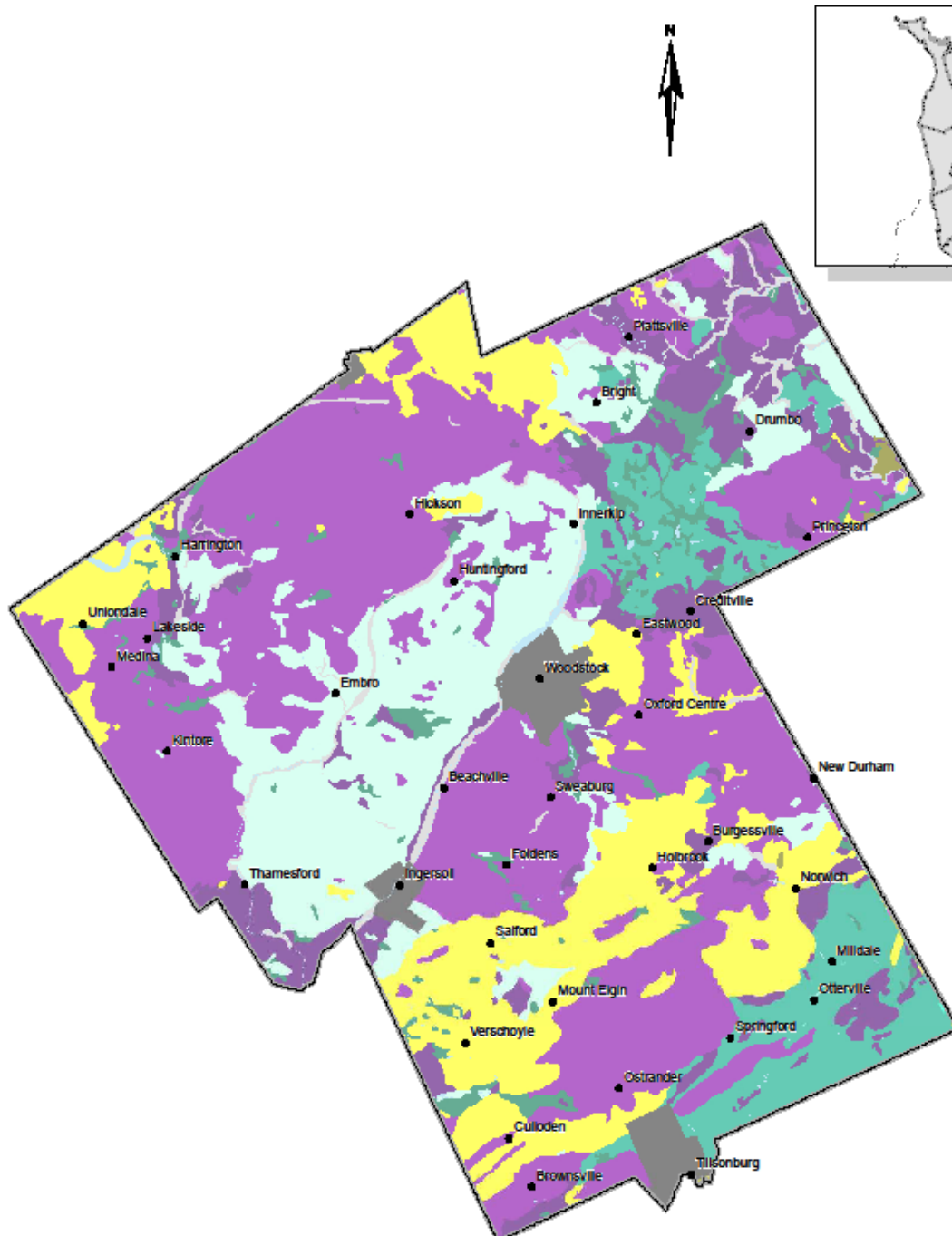


Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Middlesex\_Soil Composition.mxd) 2013/02/12-9:55:56 AM



# **SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON OXFORD COUNTY**



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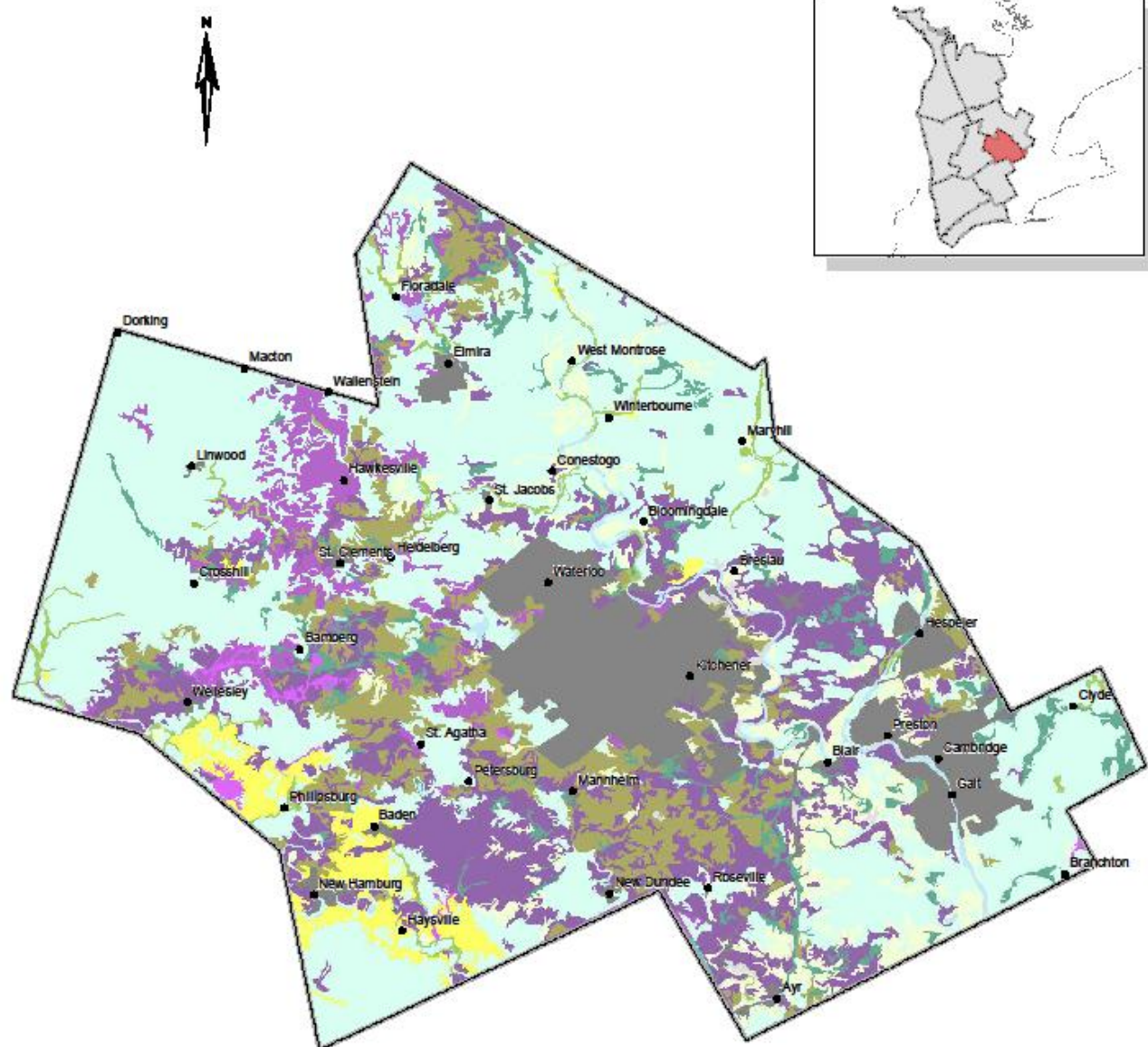
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Km

|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mxd\Final map\Oxford\_Soil Composition.mxd) 2010/03/2012-9:57:56 AM

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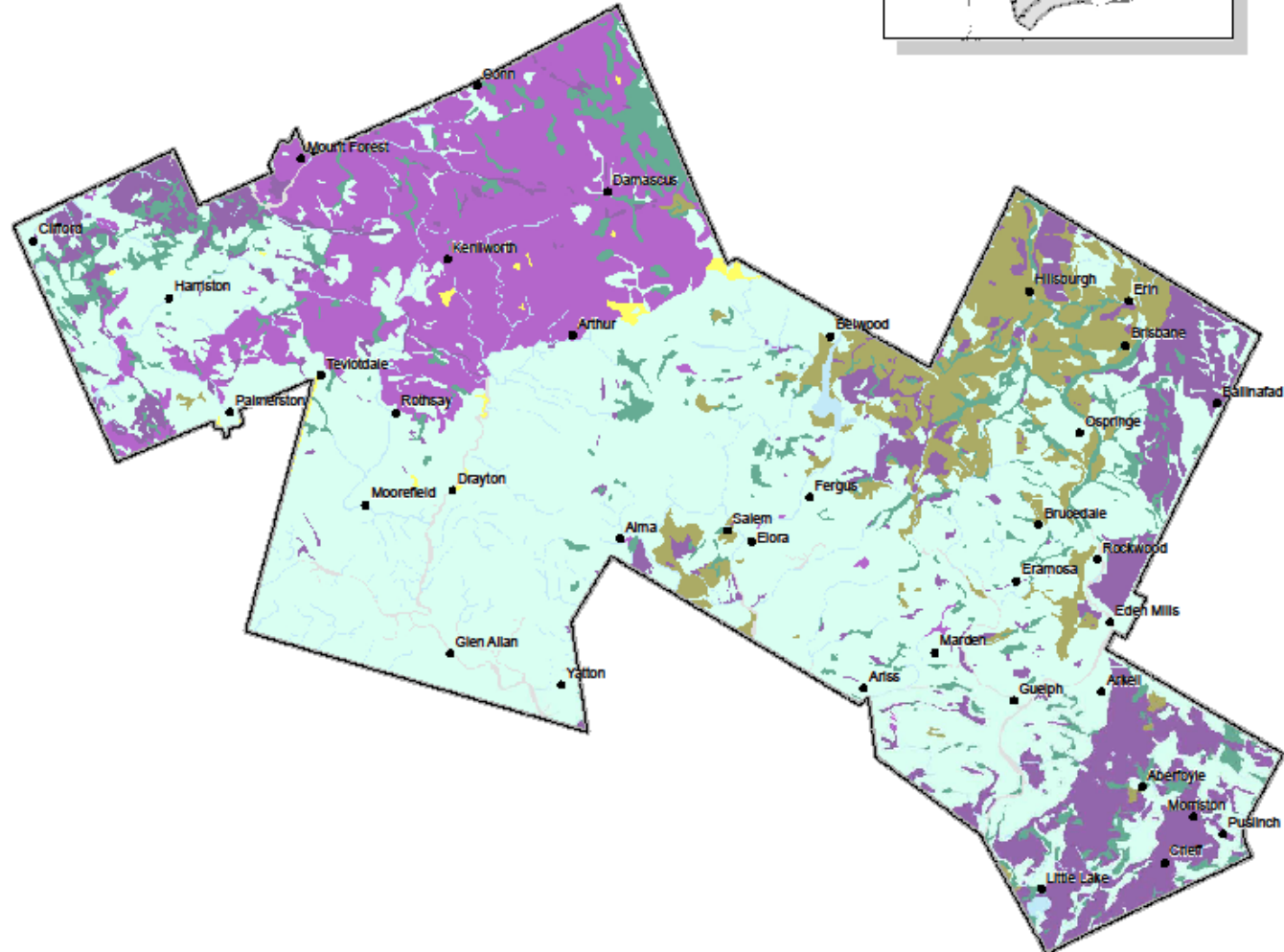
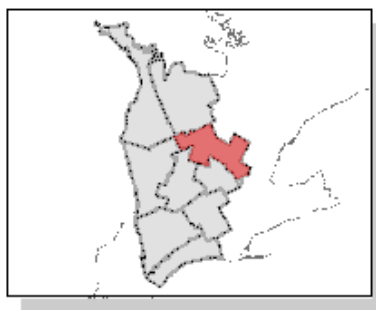
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Km

- |                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

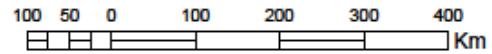
Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Final Waterloo\_Soil Composition.mxd) 2010/02/12-10:02:38 AM

# **SURFACE SOIL TEXTURE OF SURFACE OR 'A' HORIZON WELLINGTON COUNTY**



1:350,000

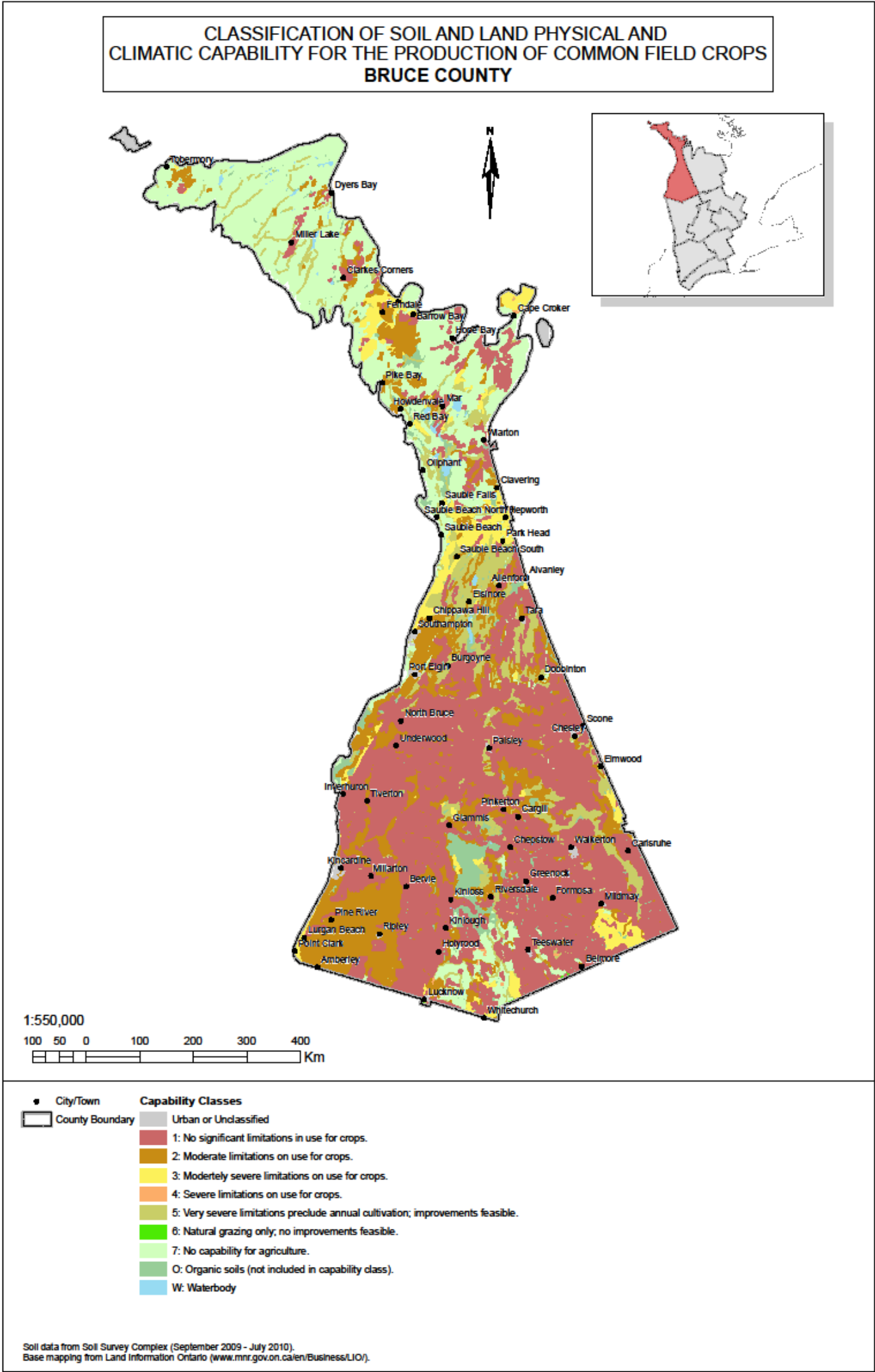


|                   |                             |                     |                           |
|-------------------|-----------------------------|---------------------|---------------------------|
| ● City/Town       | <b>Surface Soil Texture</b> | Gravelly Sand       | Silty Clay Loam           |
| □ County Boundary | Undefined                   | Gravelly Sandy Loam | Silt Loam                 |
|                   | Clay                        | Loam                | Sandy Loam                |
|                   | Clay Loam                   | Loamy Fine Sand     | Variable                  |
|                   | Fine Sand                   | Loamy Sand          | Very Fine Sandy Loam      |
|                   | Fine Sandy Loam             | Organic             | Primarily Exposed Bedrock |
|                   | Gravelly Loam               | Sand                | Urban or Disturbed Land   |
|                   | Gravel                      | Silty Clay          | Water                     |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

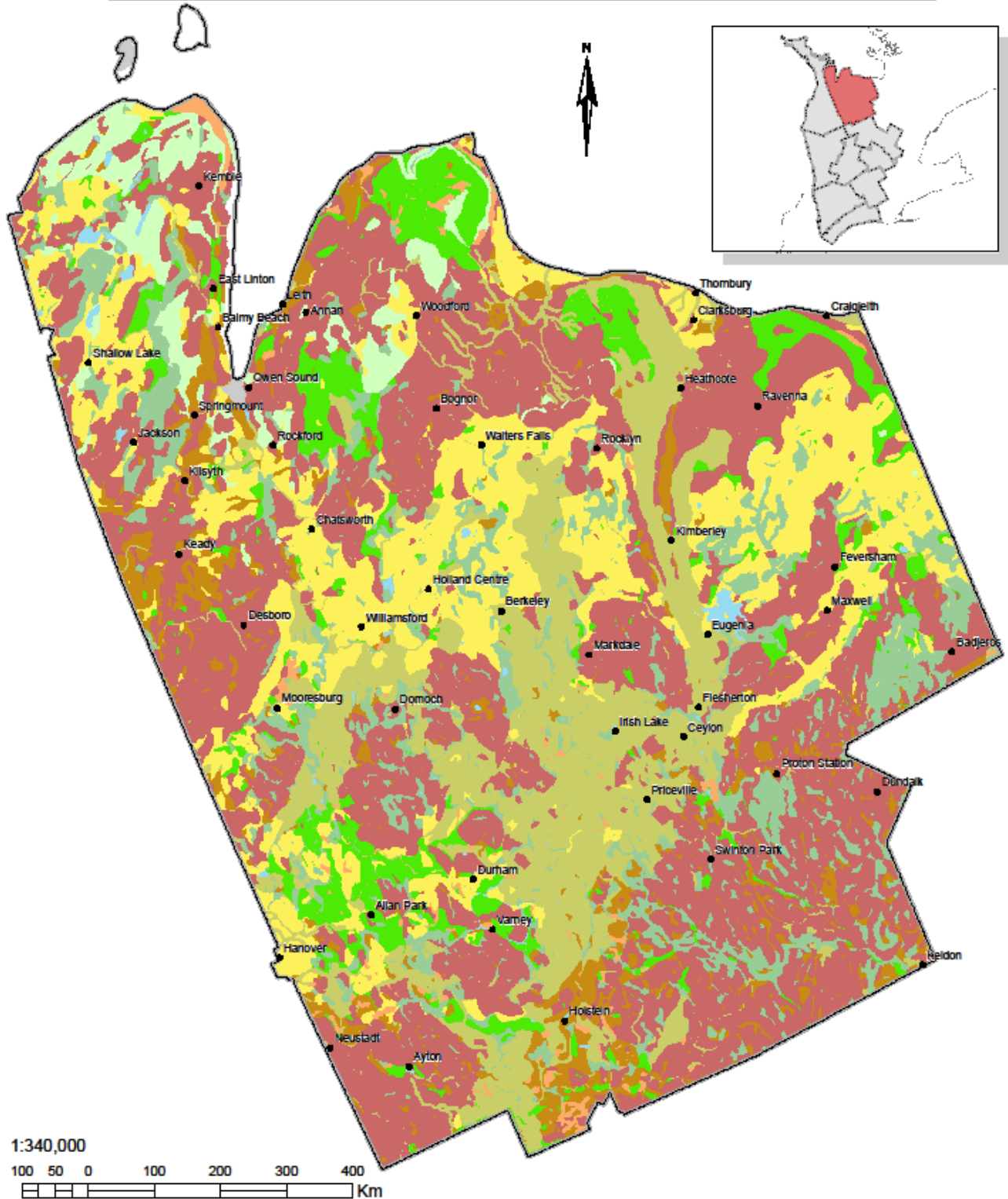
Map Document: (D:\PROJECTS\Wzans\mod\Final map\Wellington\_Soil Composition.mxd) 2003/02/12-10:04:46 AM

Appendix E: Maps of Soil Capability Classes in Nine Counties in Midwestern Ontario





# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS GREY COUNTY

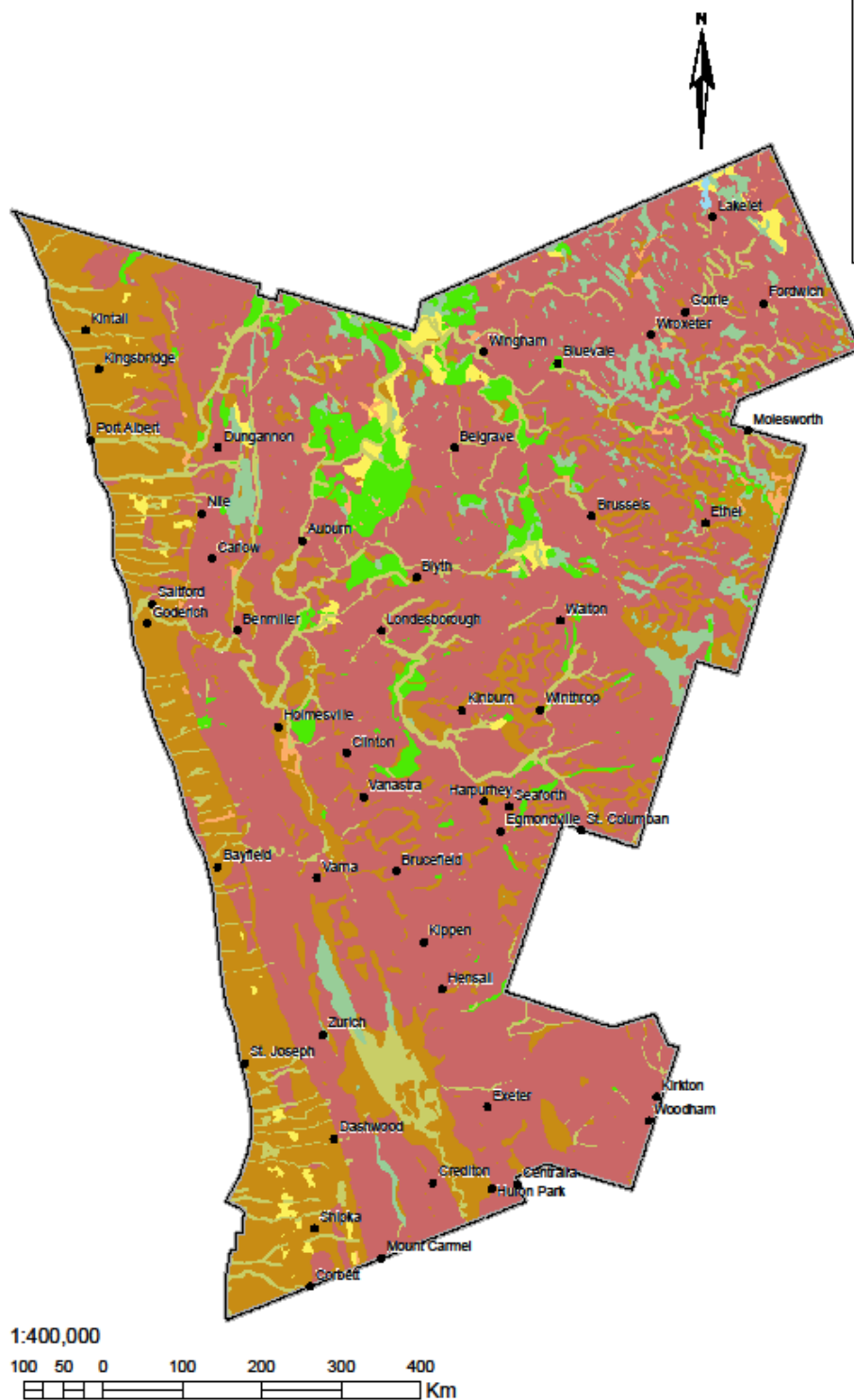


- City/Town
  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Wozana\msd\Final map\Grey\_Capability Classes.mxd) 2009/2012-9:50:12 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS HURON COUNTY

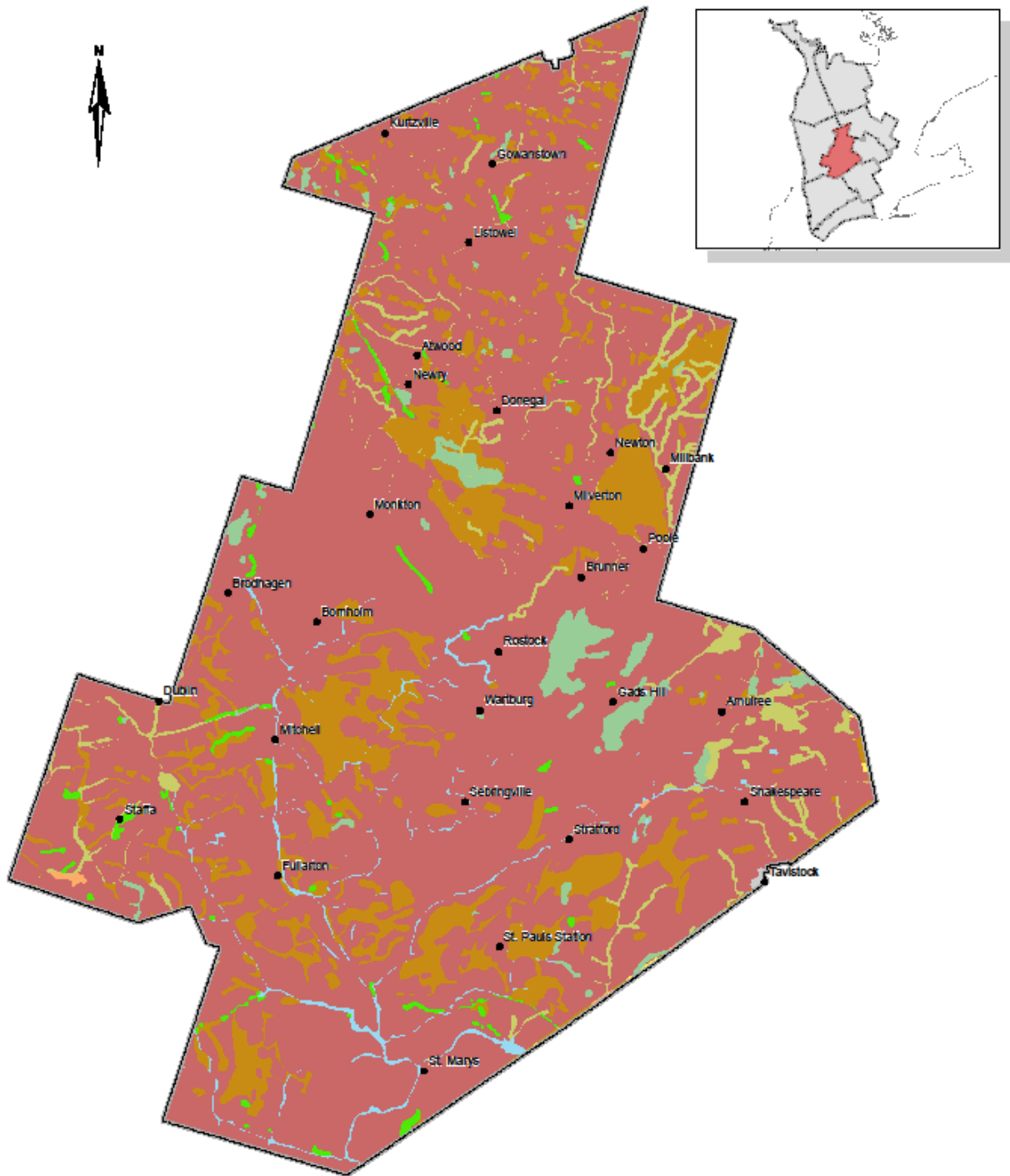


- City/Town
  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Huron\_Capability Classes.mxd) 2010/02/12-9:52:10 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS PERTH COUNTY



1:290,000

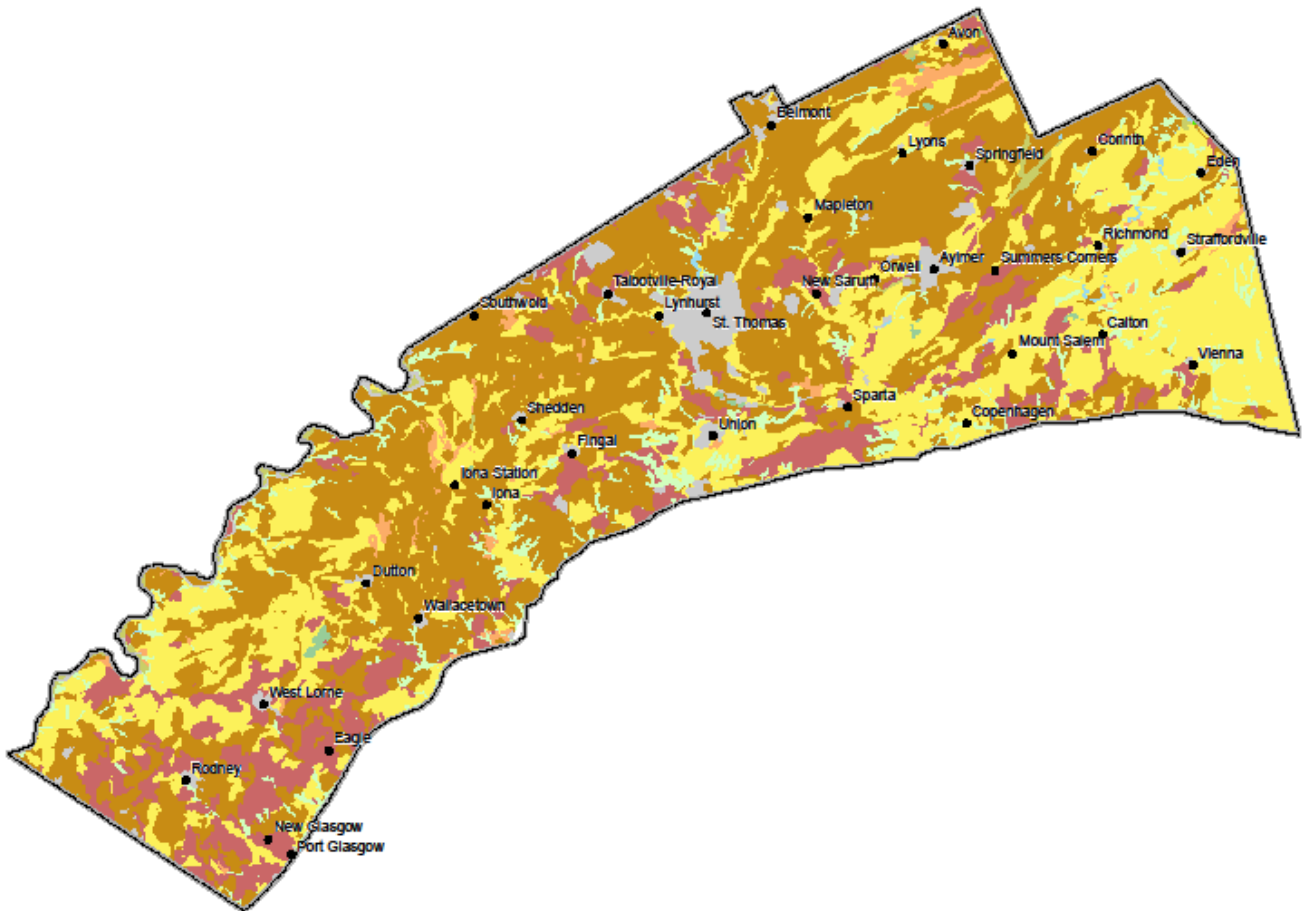
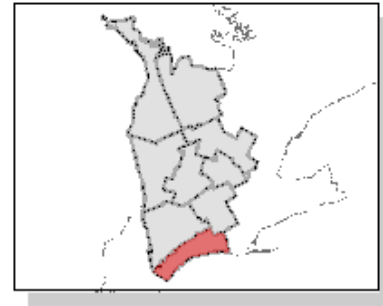
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Km

- City/Town
  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Perth\_Capability Classes.mxd) 2003/01/12-9:58:39 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS ELGIN COUNTY



1:360,000

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Km

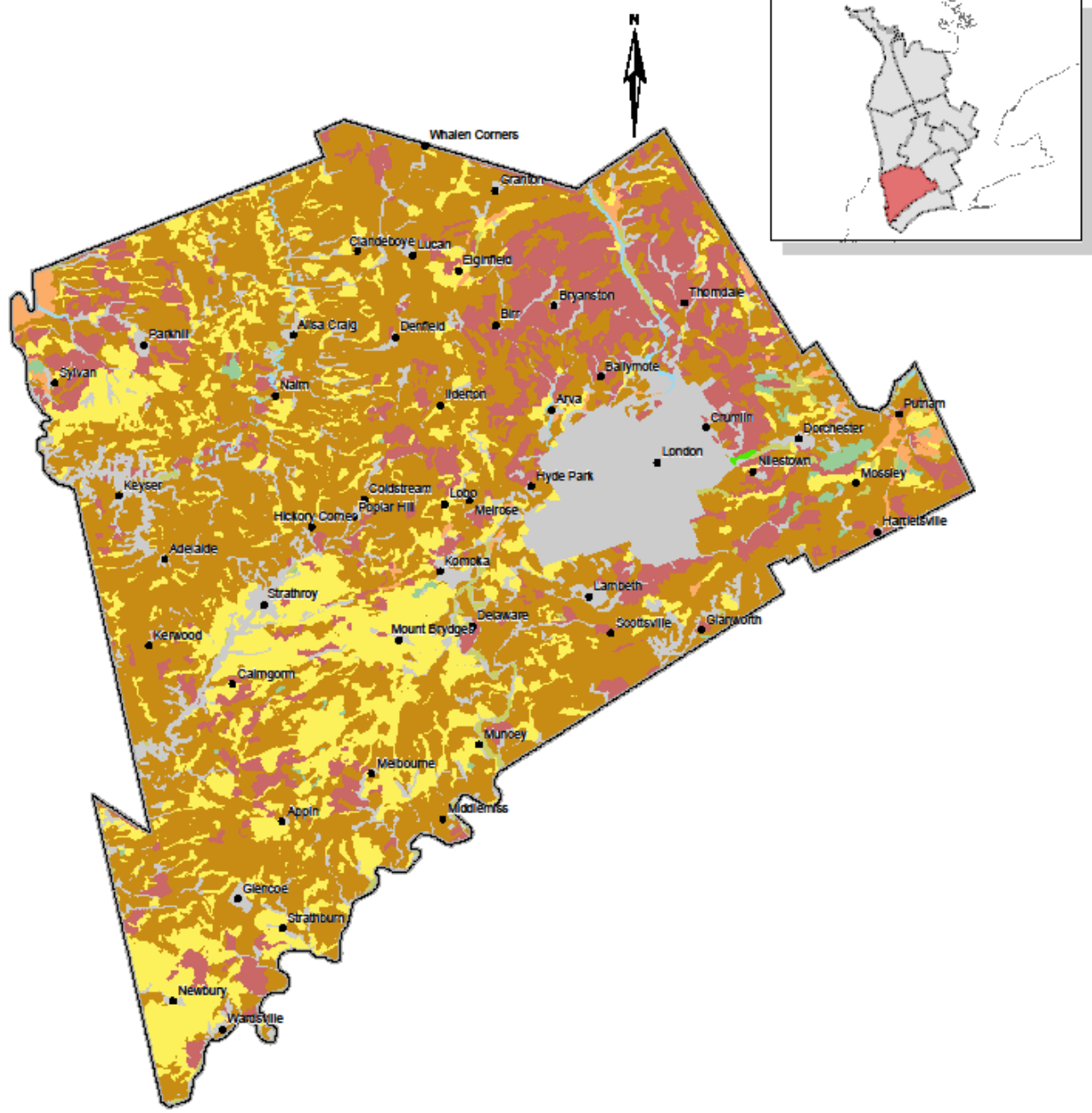
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  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Wzozana\mod\Final map\Elgin\_Capability Classes.mxd) 2009/2012-9-48:17 AM



# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS MIDDLESEX COUNTY



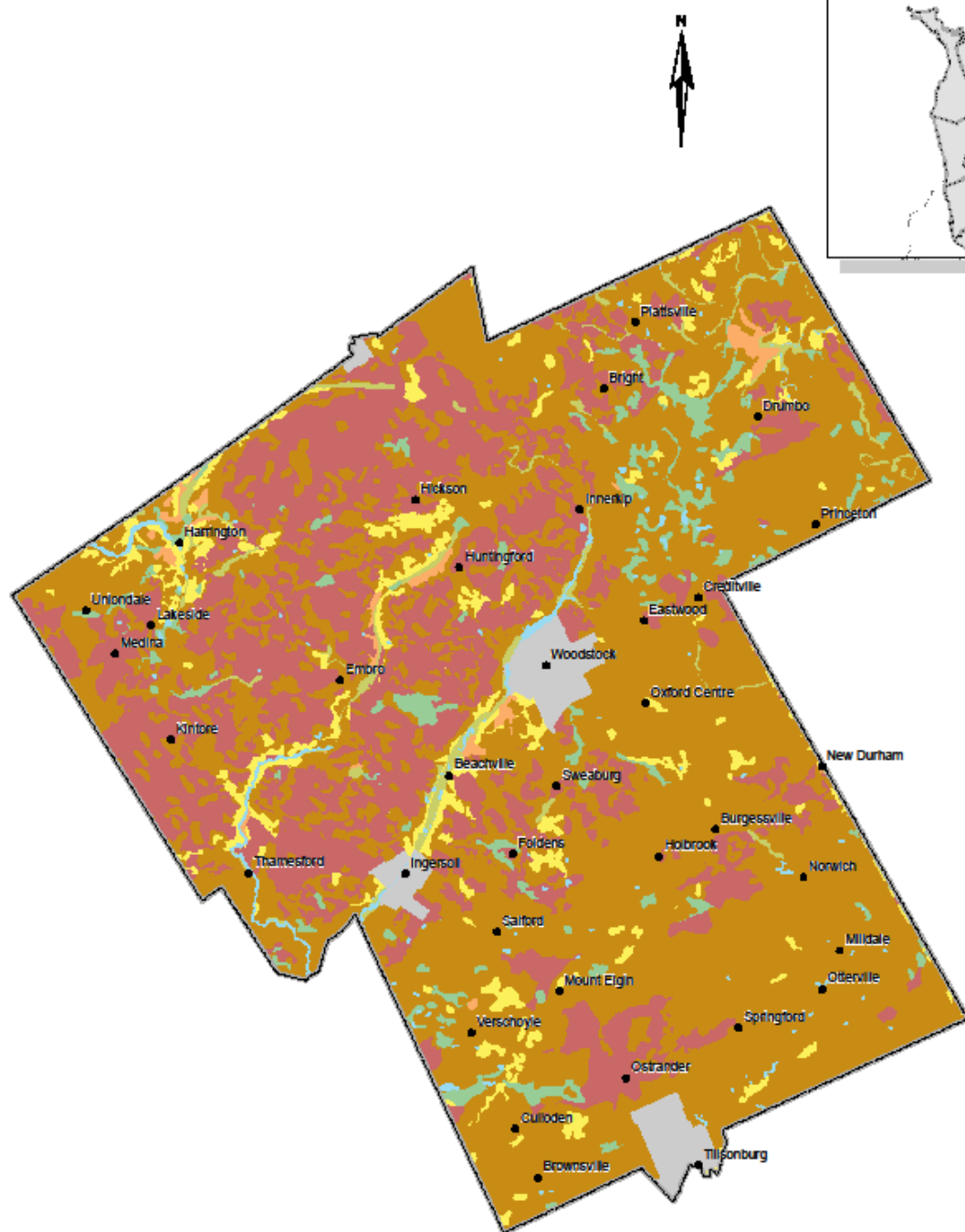
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Km

- City/Town
- County Boundary
- Urban or Unclassified
- 1: No significant limitations in use for crops.
- 2: Moderate limitations on use for crops.
- 3: Moderately severe limitations on use for crops.
- 4: Severe limitations on use for crops.
- 5: Very severe limitations preclude annual cultivation; improvements feasible.
- 6: Natural grazing only; no improvements feasible.
- 7: No capability for agriculture.
- O: Organic soils (not included in capability class).
- W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final maps\Middlesex\_Capability Classes.mxd) 2003/02/12-09:42:11 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS OXFORD COUNTY



1:290,000

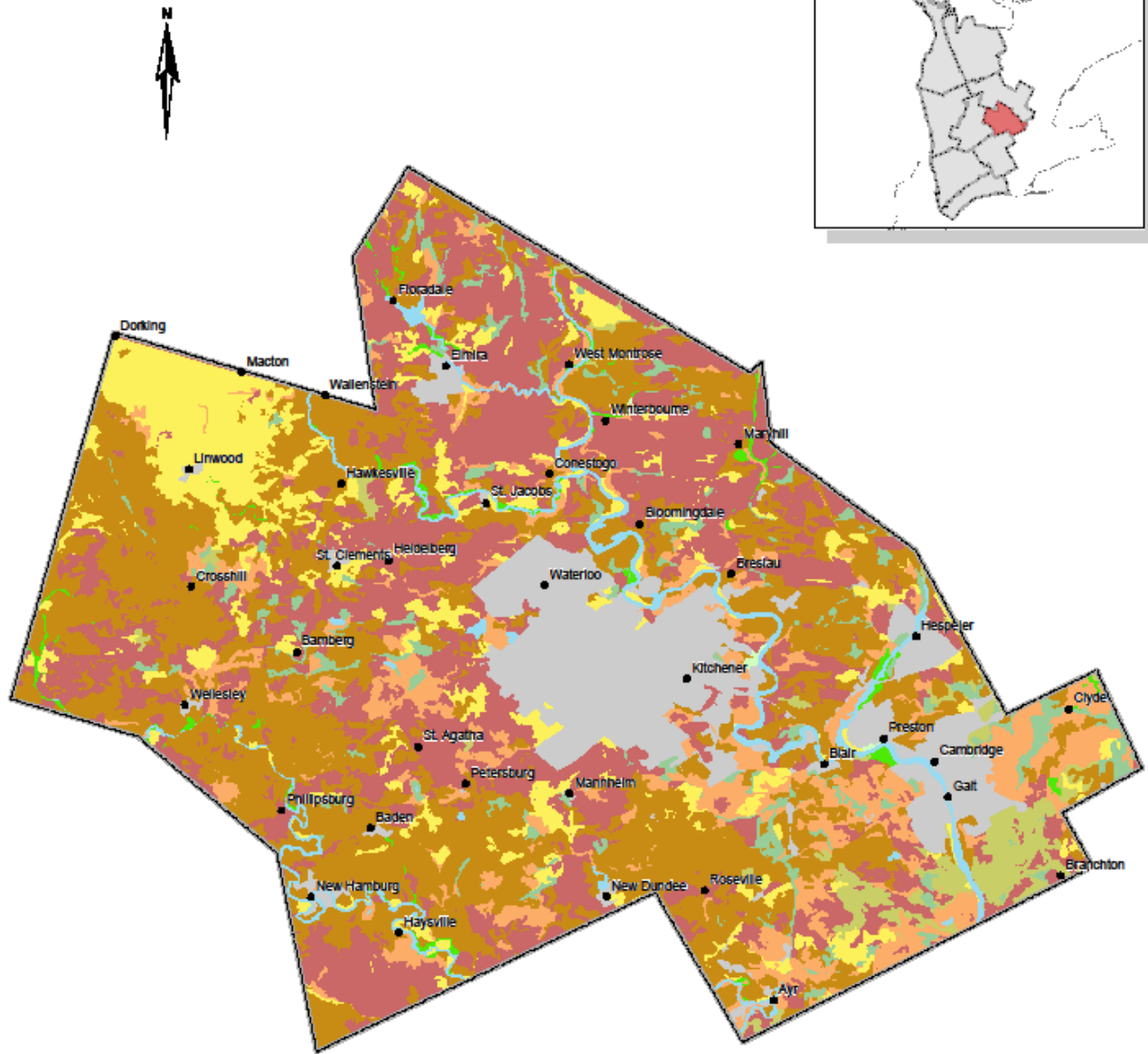
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Km

- City/Town
  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Oxford\_Capability Classes.mxd) 2003/02/12-9:56:28 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS WATERLOO COUNTY



1:240,000

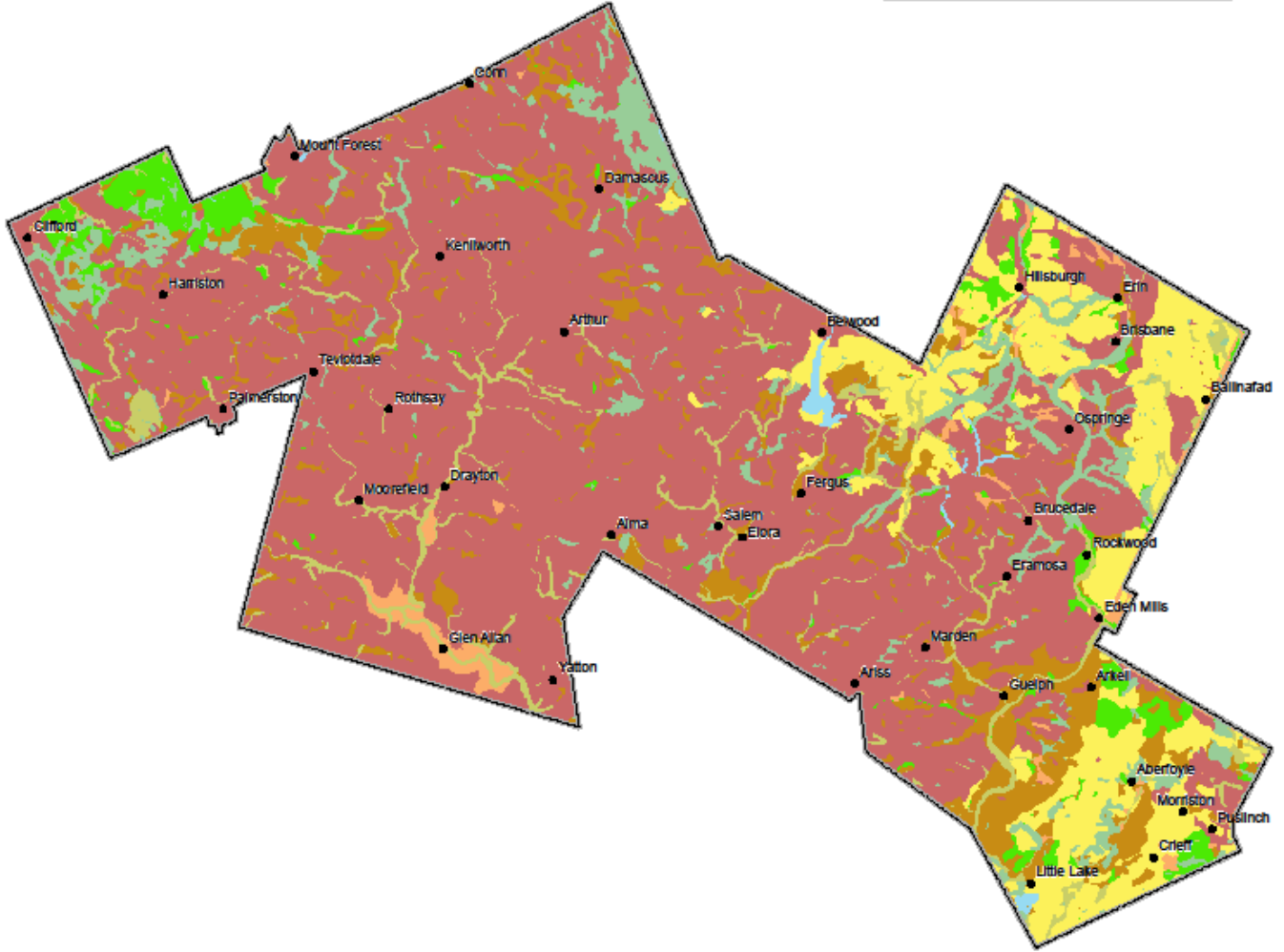
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Km

- City/Town
  - County Boundary
- Capability Classes**
- Urban or Unclassified
  - 1: No significant limitations in use for crops.
  - 2: Moderate limitations on use for crops.
  - 3: Moderately severe limitations on use for crops.
  - 4: Severe limitations on use for crops.
  - 5: Very severe limitations preclude annual cultivation; improvements feasible.
  - 6: Natural grazing only; no improvements feasible.
  - 7: No capability for agriculture.
  - O: Organic soils (not included in capability class).
  - W: Waterbody

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Wzozna\mod\final map\Waterloo\_Capability Classes.mxd) 2010/02/12--10:00:46 AM

# CLASSIFICATION OF SOIL AND LAND PHYSICAL AND CLIMATIC CAPABILITY FOR THE PRODUCTION OF COMMON FIELD CROPS WELLINGTON COUNTY



1:350,000

100 50 0 100 200 300 400  
Km

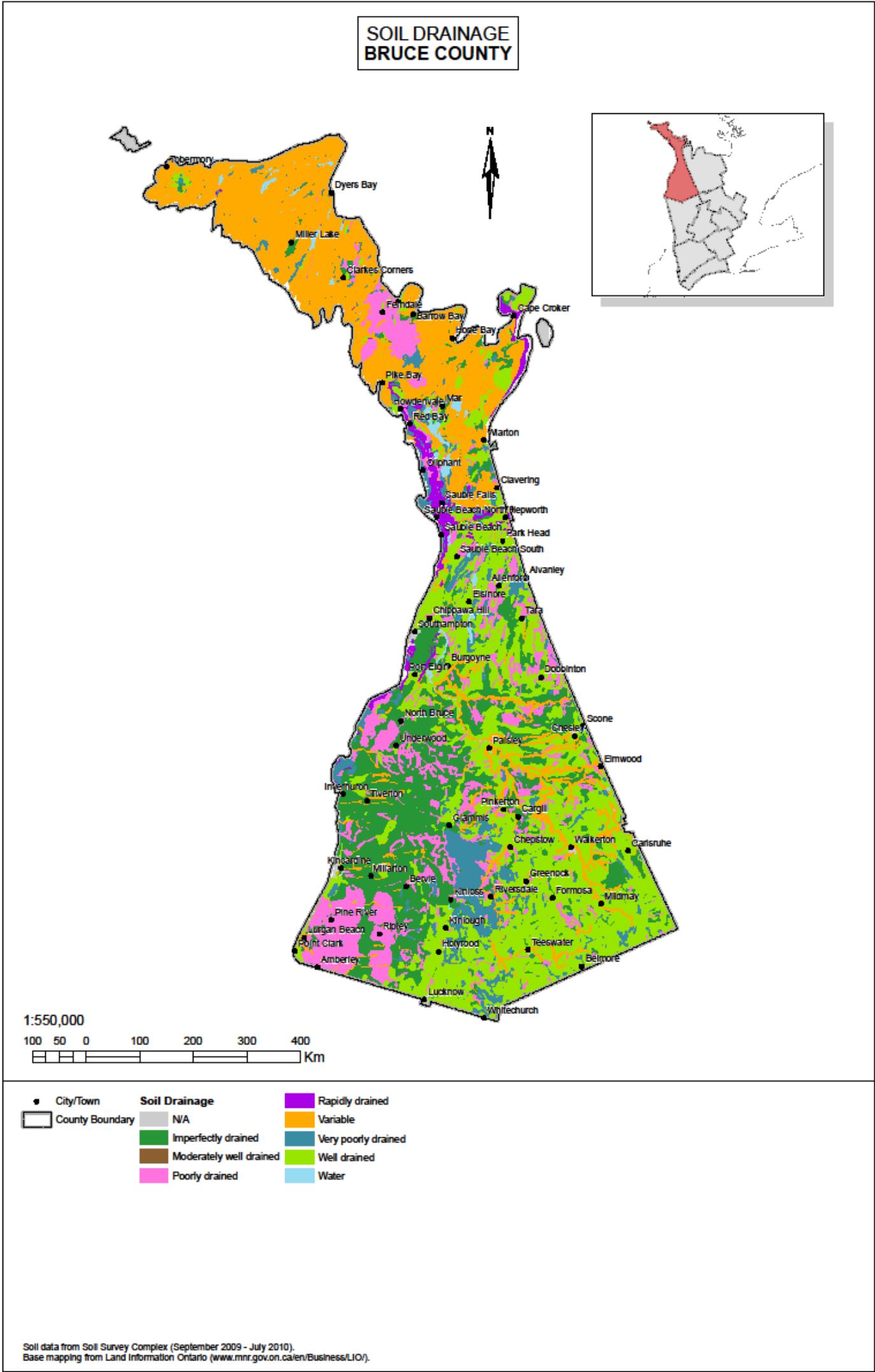
- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>● City/Town</li> <li>□ County Boundary</li> </ul> | <p><b>Capability Classes</b></p> <ul style="list-style-type: none"> <li>Urban or Unclassified</li> <li>1: No significant limitations in use for crops.</li> <li>2: Moderate limitations on use for crops.</li> <li>3: Moderately severe limitations on use for crops.</li> <li>4: Severe limitations on use for crops.</li> <li>5: Very severe limitations preclude annual cultivation; improvements feasible.</li> <li>6: Natural grazing only; no improvements feasible.</li> <li>7: No capability for agriculture.</li> <li>O: Organic soils (not included in capability class).</li> <li>W: Waterbody</li> </ul> |
|--|--|

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

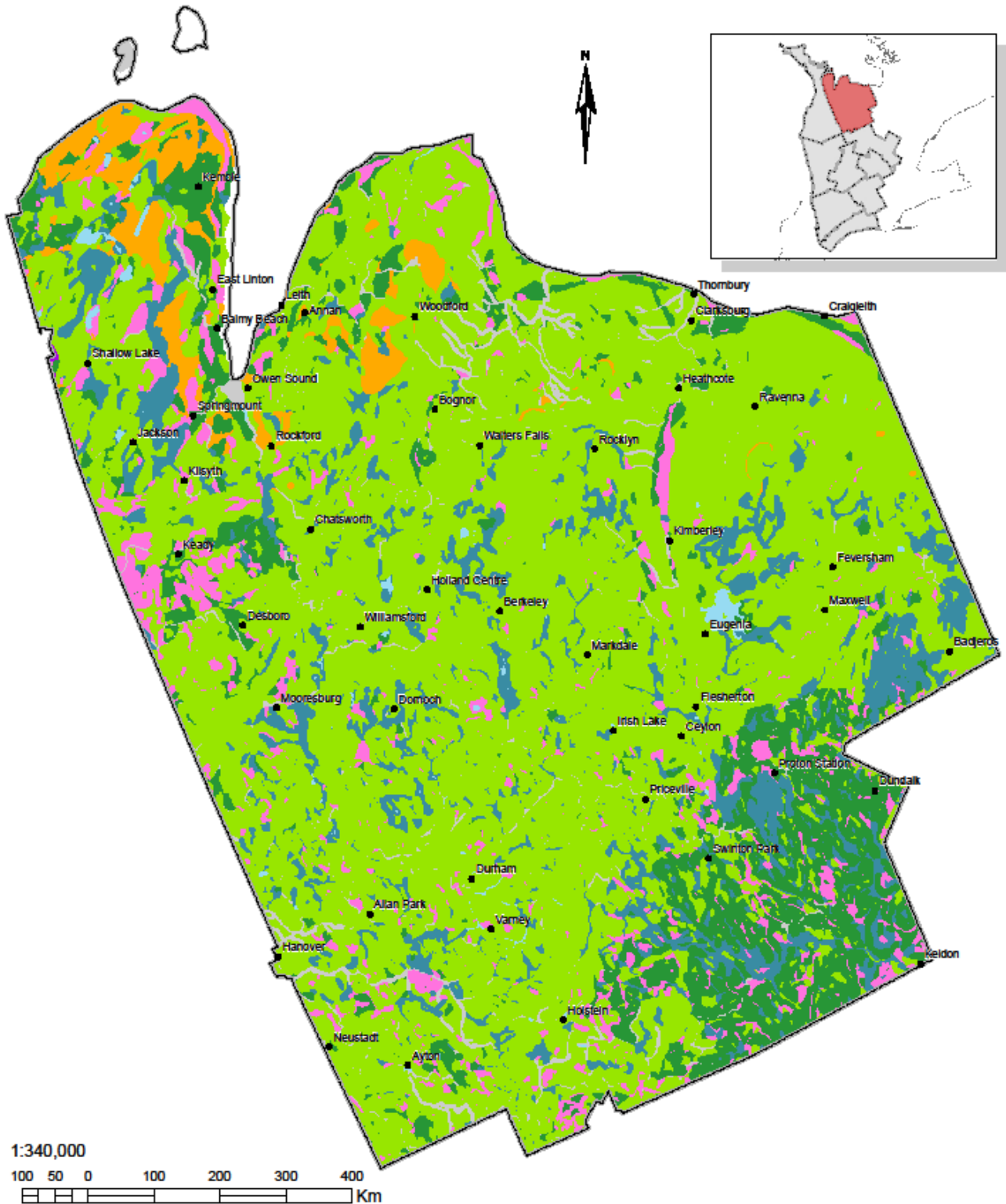
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Appendix F: Maps of Surface Soil Drainage in Nine Counties in Midwestern Ontario



# SOIL DRAINAGE GREY COUNTY

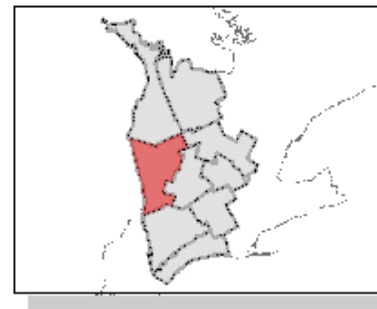
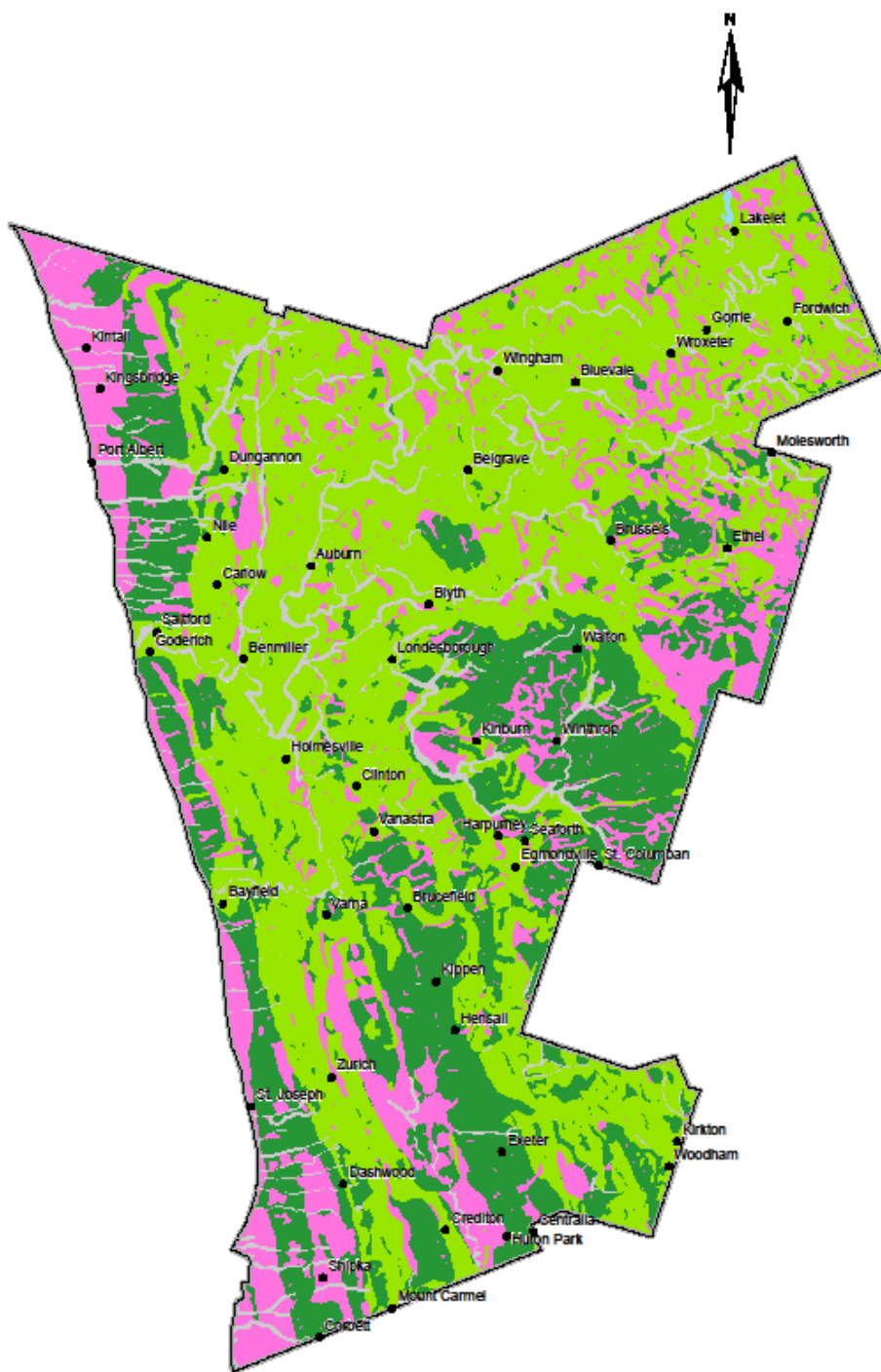


- City/Town
- County Boundary
- Soil Drainage**
  - NA
  - Imperfectly drained
  - Moderately well drained
  - Poorly drained
  - Rapidly drained
  - Variable
  - Very poorly drained
  - Well drained
  - Water

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Grey\_Drainage.mxd) 2010.02.12-9:50:39 AM

# SOIL DRAINAGE HURON COUNTY



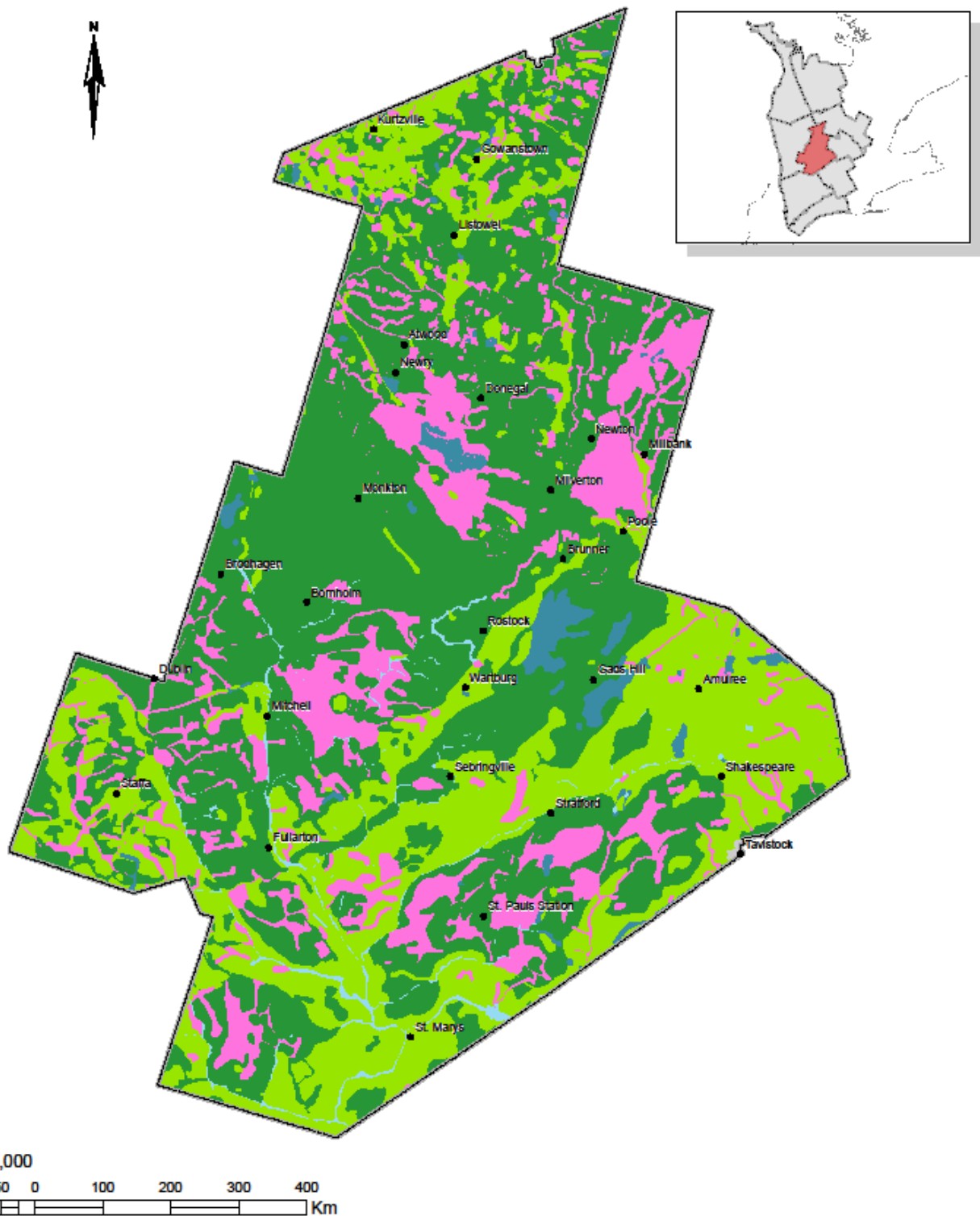
1:400,000  
100 50 0 100 200 300 400  
Km

- |                   |                         |                        |
|-------------------|-------------------------|------------------------|
| • City/Town       | <b>Soil Drainage</b>    | <b>Rapidly drained</b> |
| □ County Boundary | NA                      | Variable               |
|                   | Imperfectly drained     | Very poorly drained    |
|                   | Moderately well drained | Well drained           |
|                   | Poorly drained          | Water                  |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Huron\_Drainage.mxd) 2010/12/12 9:52:46 AM

# SOIL DRAINAGE PERTH COUNTY



1:290,000

100 50 0 100 200 300 400  
Km

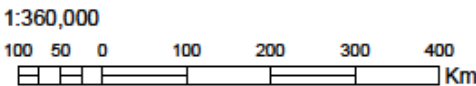
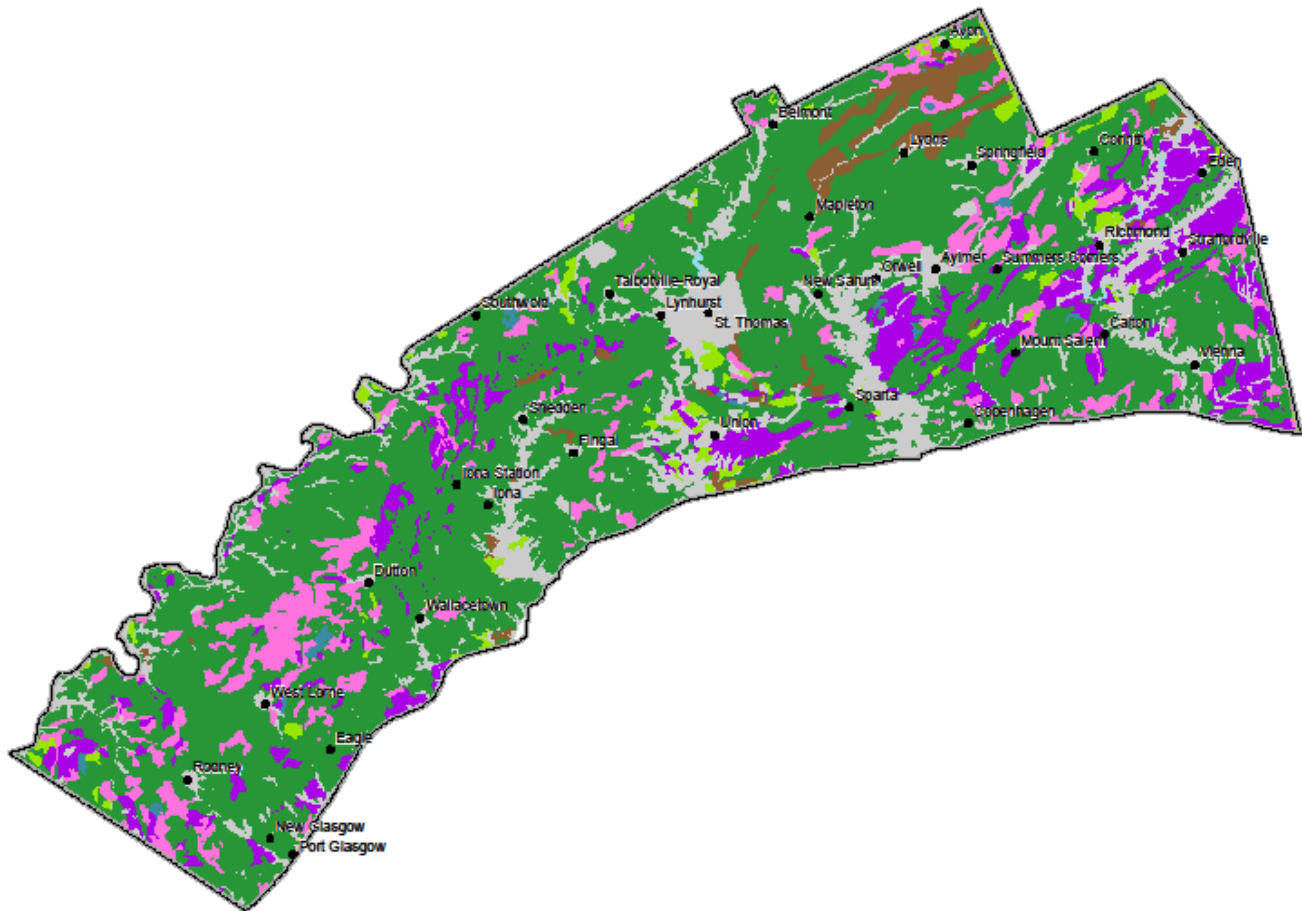
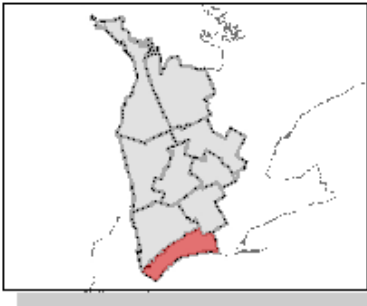
- City/Town
- County Boundary
- Soil Drainage**
  - NA
  - Imperfectly drained
  - Moderately well drained
  - Poorly drained
  - Rapidly drained
  - Variable
  - Very poorly drained
  - Well drained
  - Water

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Wzara\mod\Final map\Perth\_Drainage.mxd) 2012/03/12-9:50:10 AM



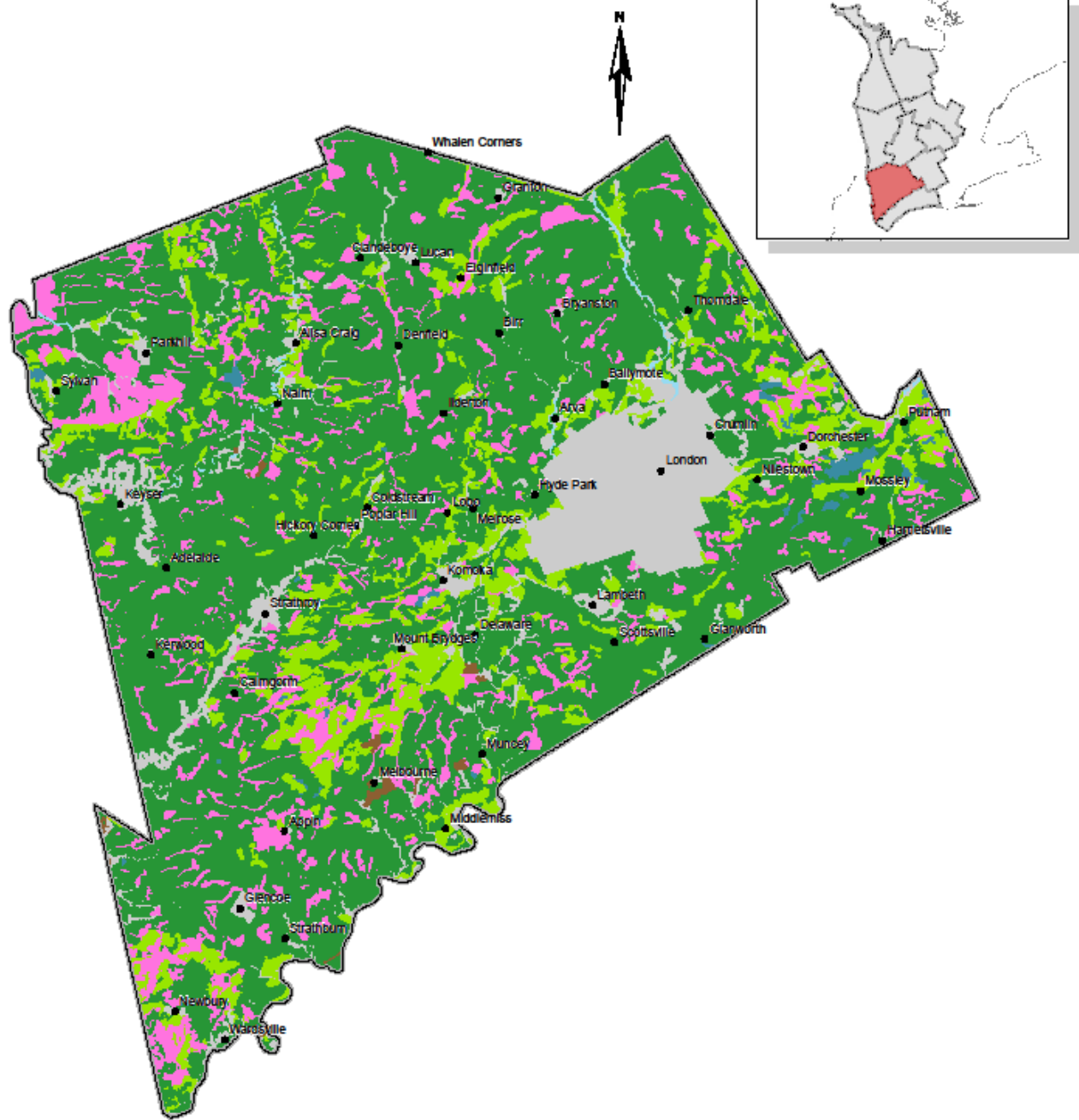
# SOIL DRAINAGE ELGIN COUNTY



- |                 |                         |                     |
|-----------------|-------------------------|---------------------|
| • City/Town     | <b>Soil Drainage</b>    | Rapidly drained     |
| County Boundary | N/A                     | Variable            |
|                 | Imperfectly drained     | Very poorly drained |
|                 | Moderately well drained | Well drained        |
|                 | Poorly drained          | Water               |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

# SOIL DRAINAGE MIDDLESEX COUNTY



1:370,000

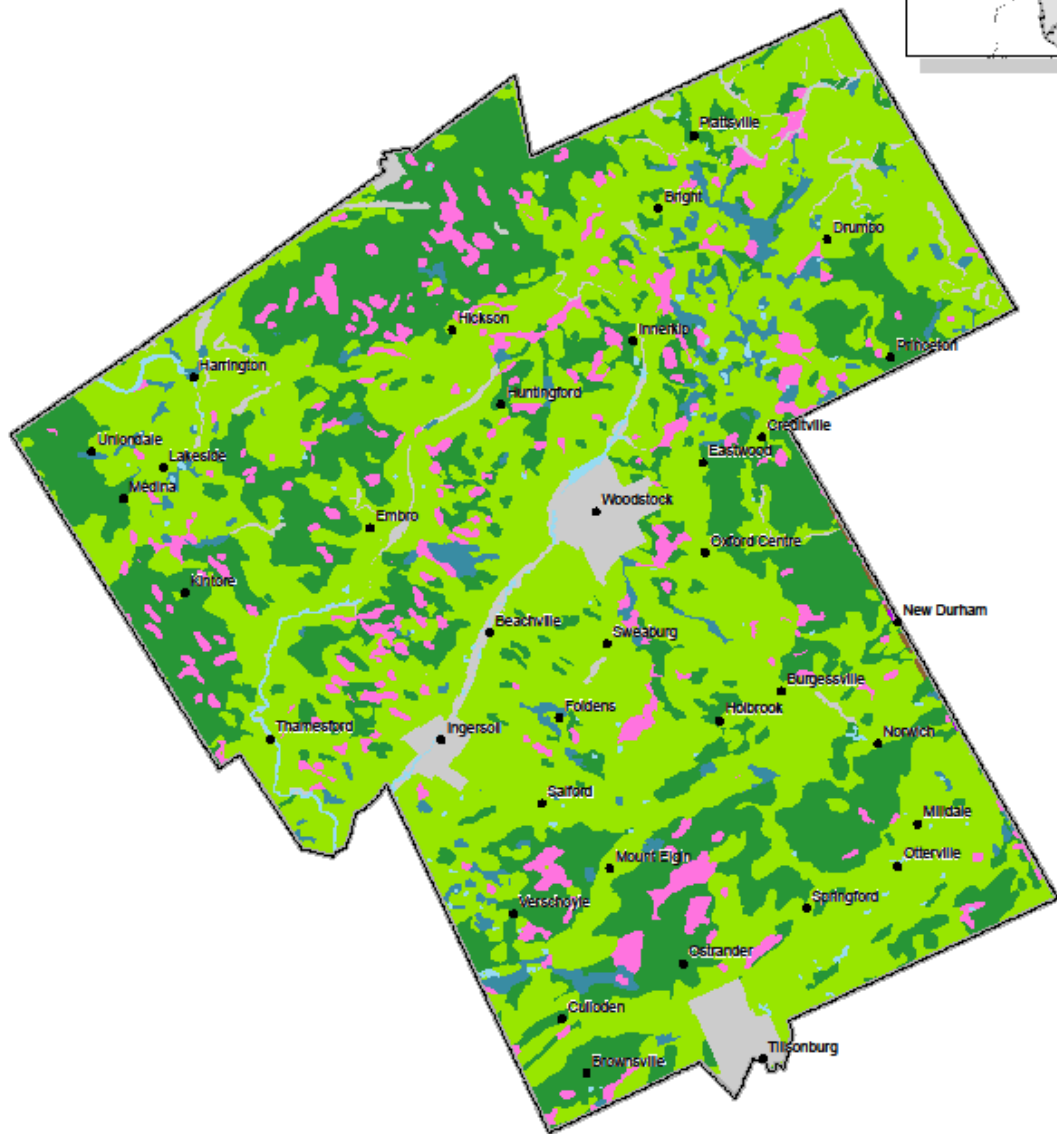
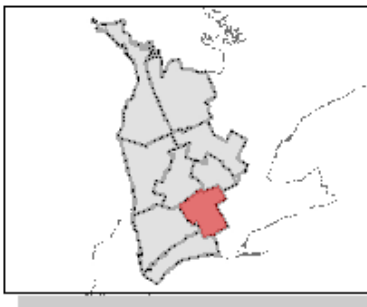
100 50 0 100 200 300 400  
Km

- City/Town
- County Boundary
- Soil Drainage**
  - NA
  - Imperfectly drained
  - Moderately well drained
  - Poorly drained
  - Rapidly drained
  - Variable
  - Very poorly drained
  - Well drained
  - Water

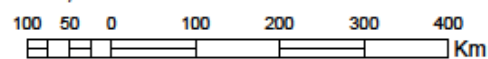
Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final maps\Middlesex\_Drainage.mxd) 20/03/2012-8:54:49 AM

# SOIL DRAINAGE OXFORD COUNTY



1:290,000

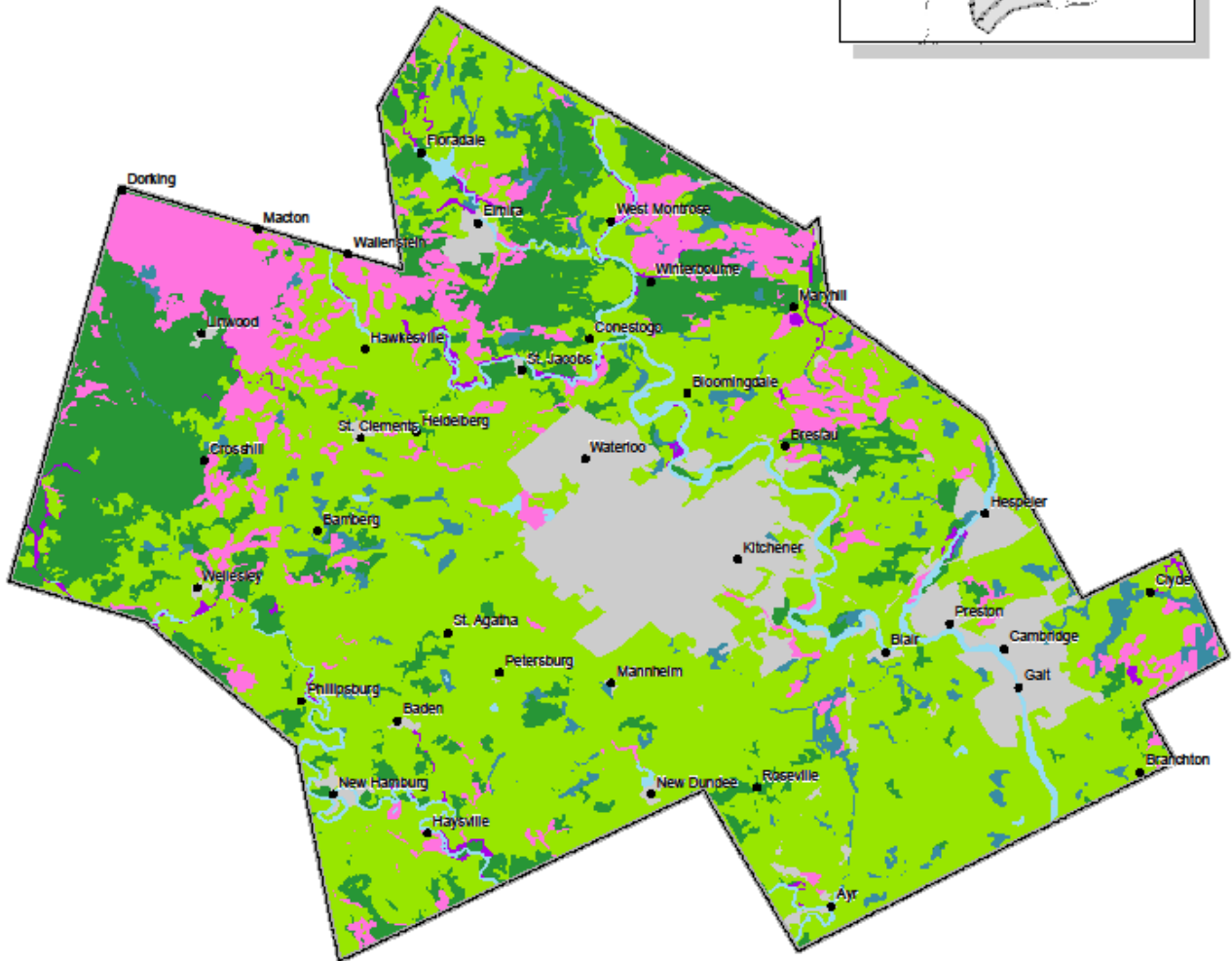
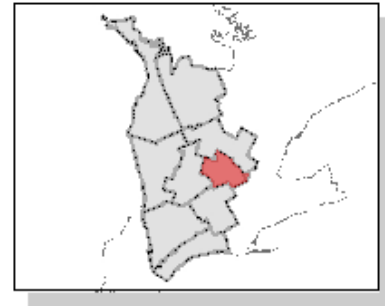


|                   |                         |                        |
|-------------------|-------------------------|------------------------|
| • City/Town       | <b>Soil Drainage</b>    | <b>Rapidly drained</b> |
| □ County Boundary | NA                      | Variable               |
|                   | Imperfectly drained     | Very poorly drained    |
|                   | Moderately well drained | Well drained           |
|                   | Poorly drained          | Water                  |

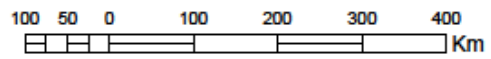
Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Oxford\_Drainage.mxd) 20/03/2013-8:58:56 AM

# SOIL DRAINAGE WATERLOO COUNTY



1:240,000



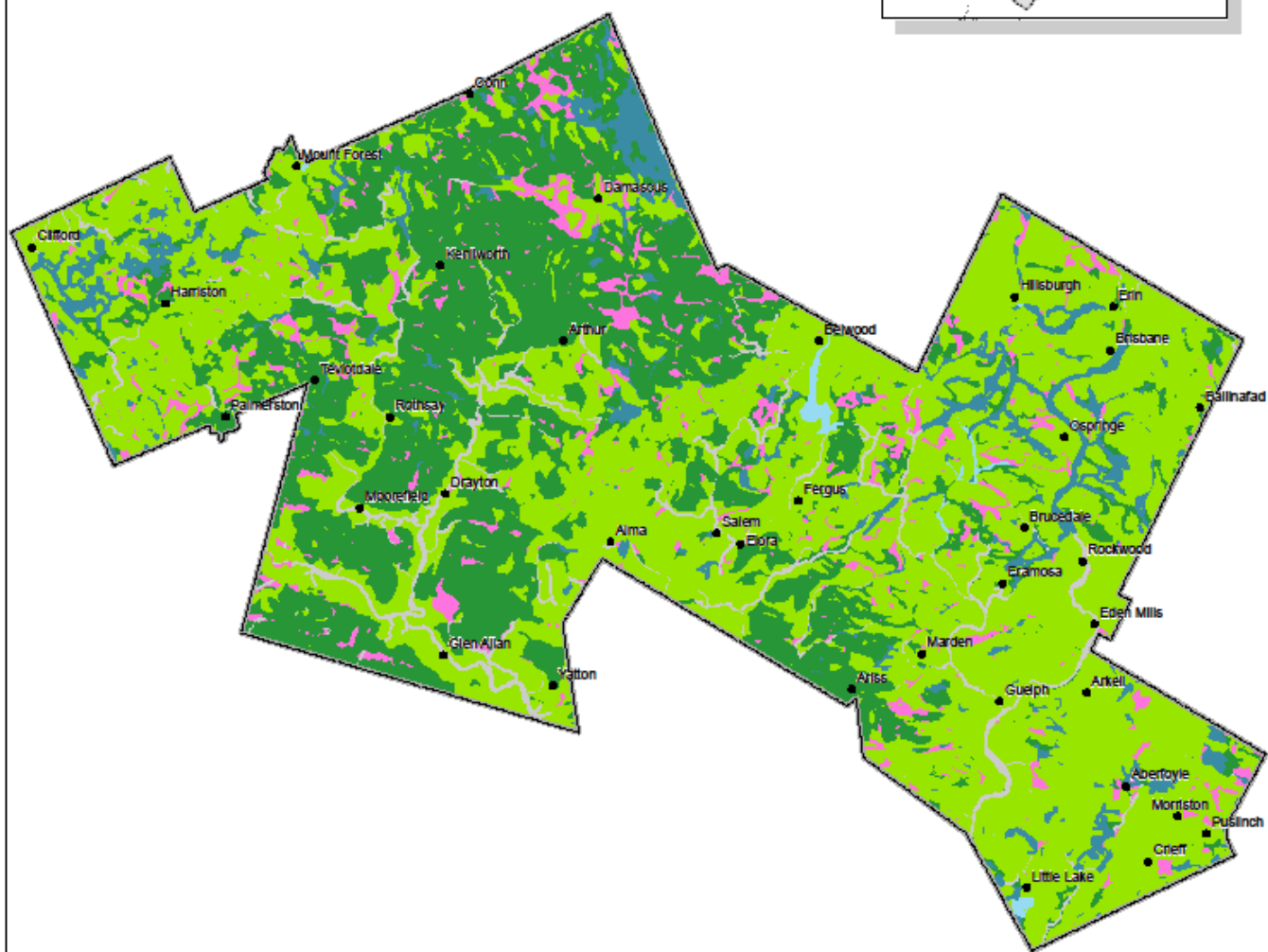
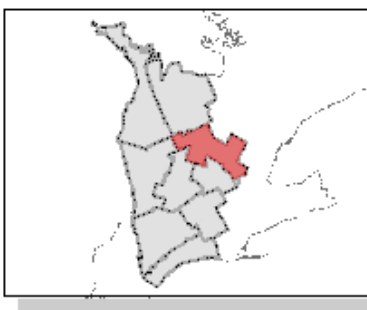
- |                   |                         |                        |
|-------------------|-------------------------|------------------------|
| • City/Town       | <b>Soil Drainage</b>    | <b>Rapidly drained</b> |
| □ County Boundary | NA                      | Variable               |
|                   | Imperfectly drained     | Very poorly drained    |
|                   | Moderately well drained | Well drained           |
|                   | Poorly drained          | Water                  |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\Final Waterloo\_Drainage.mxd) 2010/03/20 12:10:01:42 AM



# SOIL DRAINAGE WELLINGTON COUNTY



1:350,000

100 50 0 100 200 300 400  
Km

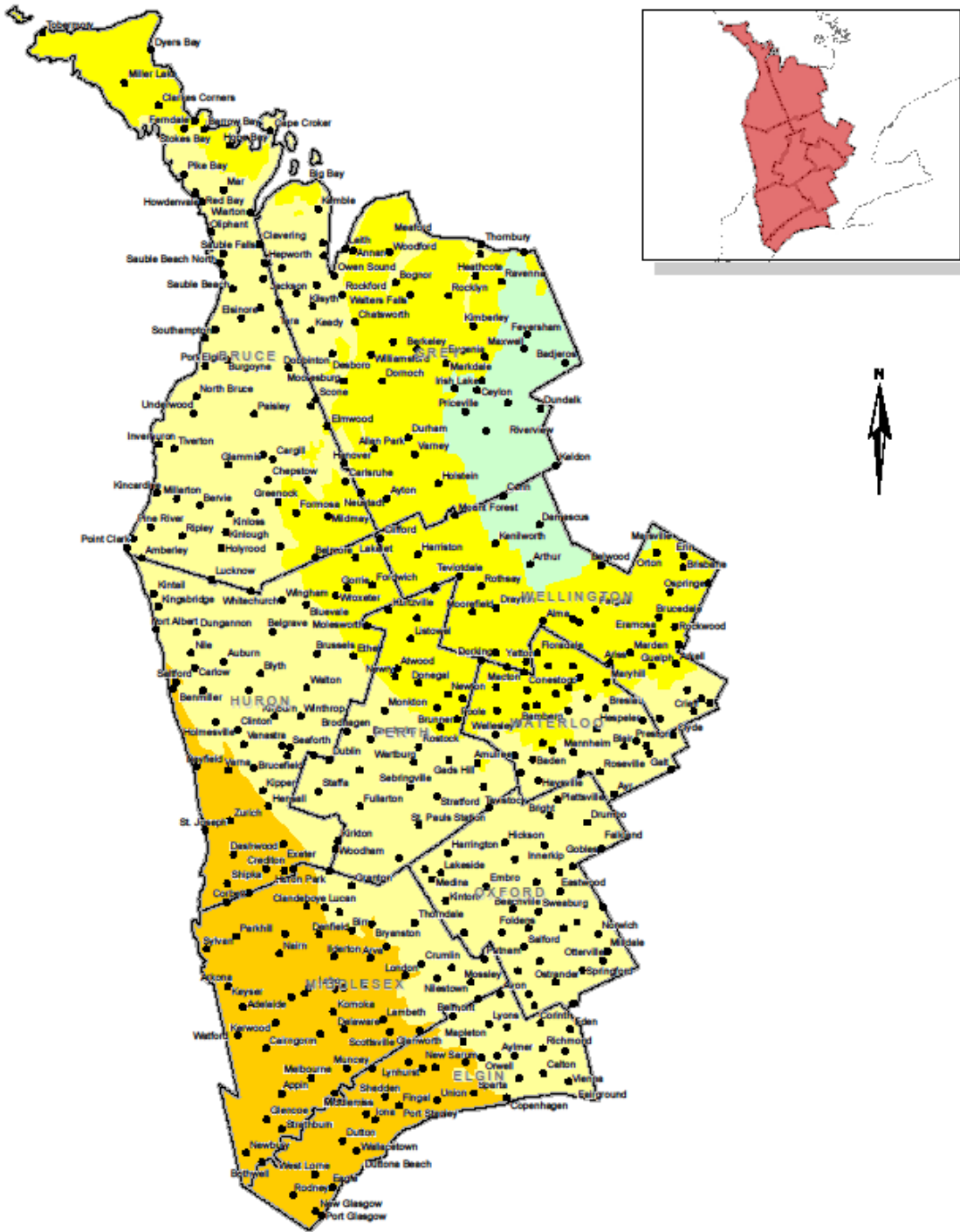
- |                 |                         |                     |
|-----------------|-------------------------|---------------------|
| • City/Town     | <b>Soil Drainage</b>    | Rapidly drained     |
| County Boundary | NA                      | Variable            |
|                 | Imperfectly drained     | Very poorly drained |
|                 | Moderately well drained | Well drained        |
|                 | Poorly drained          | Water               |

Soil data from Soil Survey Complex (September 2009 - July 2010).  
Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

Map Document: (D:\PROJECTS\Rosana\mod\Final map\FinalWellington\_Drainage.mxd) 20/03/2012-10:03:37 AM

Appendix G: Plant Hardiness Zones in Midwestern Ontario

PLANT HARDINESS ZONES  
BRUCE, ELGIN, GREY, HURON, MIDDLESEX, OXFORD, PERTH, WATERLOO, WELLINGTON



1:1,150,000  
100 50 0 100 200 300 400  
Km

- City/Town
- County Boundary
- Plant Hardiness Zones
  - 4b (-37.7 °C to -28.9 °C)
  - 5a (-28.9 °C to -26.1 °C)
  - 5b (-26.1 °C to -23.3 °C)
  - 6a (-23.3 °C to -20.6 °C)

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Base mapping from Land Information Ontario ([www.mnr.gov.on.ca/en/Business/LIO/](http://www.mnr.gov.on.ca/en/Business/LIO/)).

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<http://www.omafra.gov.on.ca/english/landuse/classify.htm#cap> Posted April 7, 2011.  
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