

SECTION 2: POPULATION AND LAND USE

Growth in the Spring Lake Watershed

The Spring Lake Watershed is located in West Michigan, and flows into the Grand River in northwestern Ottawa County, just 2.6 nautical miles upstream of Lake Michigan. This is one of the fastest growing regions in the Midwest, and it is one of the few local areas in Michigan that continued to see significant growth in both population and new development throughout the last decade.

Why is Stormwater Runoff a Problem?

Stormwater runoff is rain or melting snow that cannot soak into the ground. It flows over hard, impervious surfaces, collecting pollutants and debris as it enters into our waterways. It promotes water pollution, algae blooms, flooding, and erosion damage. As the region continues to grow, new development brings with it more and more impervious surfaces - paved roadways, parking lots, and rooftops. Stormwater hits these hard, impenetrable surfaces and runs off, flowing through storm drains and directly into surrounding waterways (Spring Lake, the Grand River, and Lake Michigan). The results of this runoff can be severe.



Photo credit: Spring Lake Lake Board



Photo credit: A. Steinman

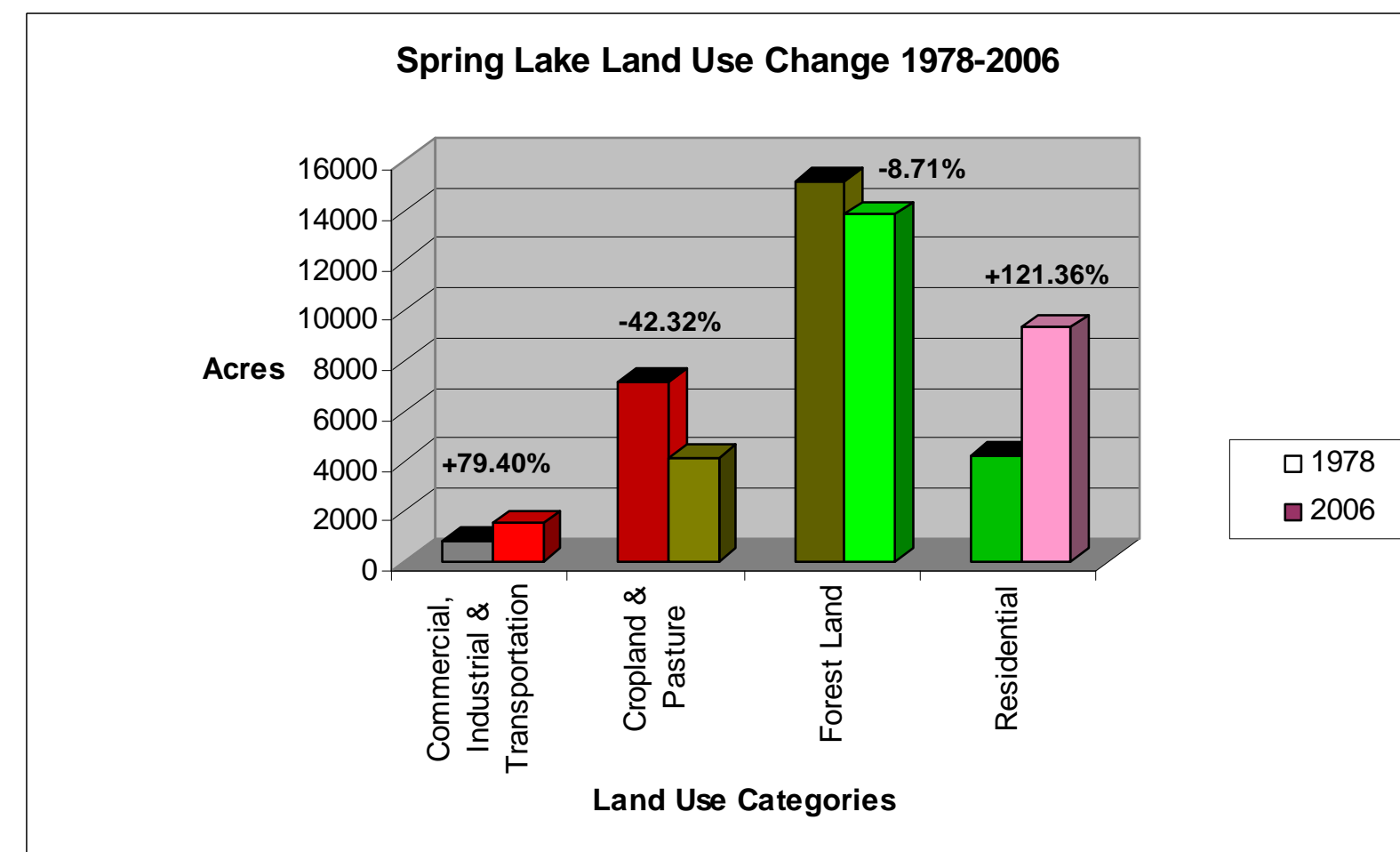
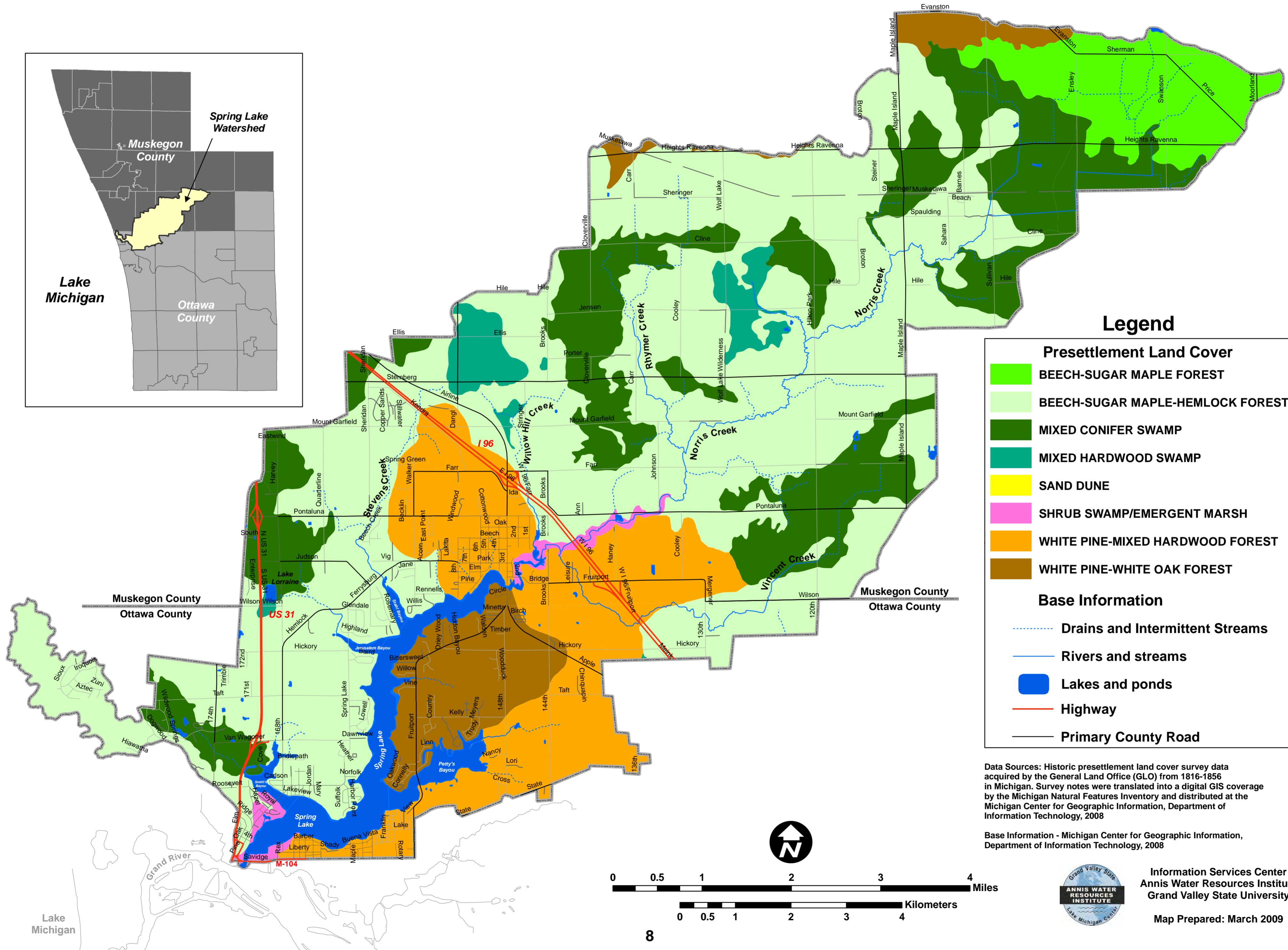
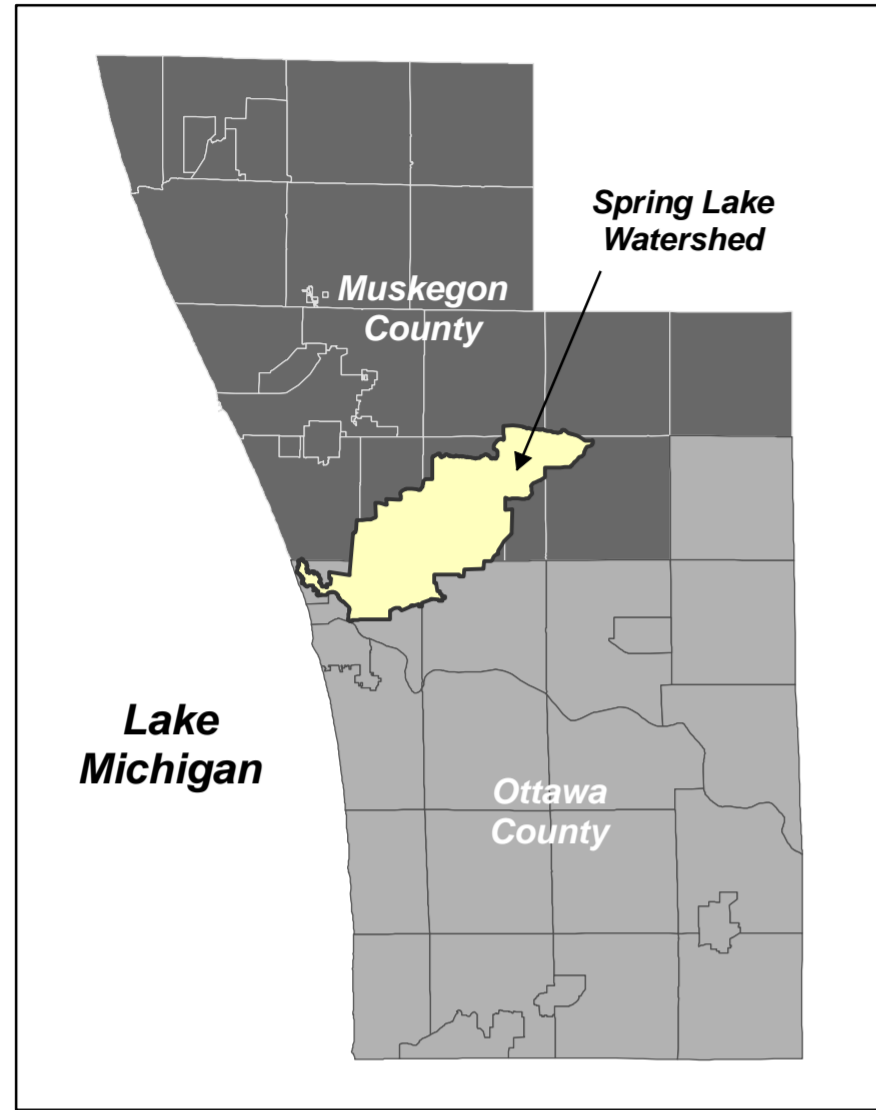


Photo credit: C. Morse, Muskegon Chronicle



Photo credit: N. DeMol

Presettlement Land Cover



Legend

Presettlement Land Cover

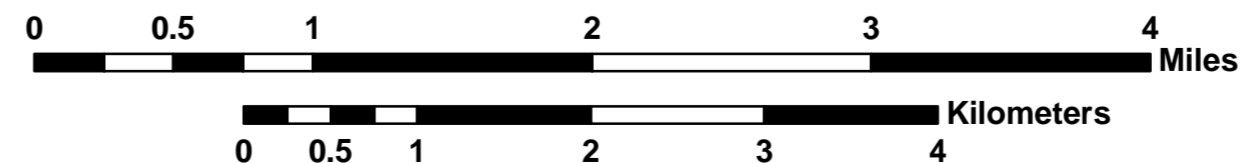
- BEECH-SUGAR MAPLE FOREST
- BEECH-SUGAR MAPLE-HEMLOCK FOREST
- MIXED CONIFER SWAMP
- MIXED HARDWOOD SWAMP
- SAND DUNE
- SHRUB SWAMP/EMERGENT MARSH
- WHITE PINE-MIXED HARDWOOD FOREST
- WHITE PINE-WHITE OAK FOREST

Base Information

- Drains and Intermittent Streams
- Rivers and streams
- Lakes and ponds
- Highway
- Primary County Road

Data Sources: Historic presettlement land cover survey data acquired by the General Land Office (GLO) from 1816-1856 in Michigan. Survey notes were translated into a digital GIS coverage by the Michigan Natural Features Inventory and distributed at the Michigan Center for Geographic Information, Department of Information Technology, 2008

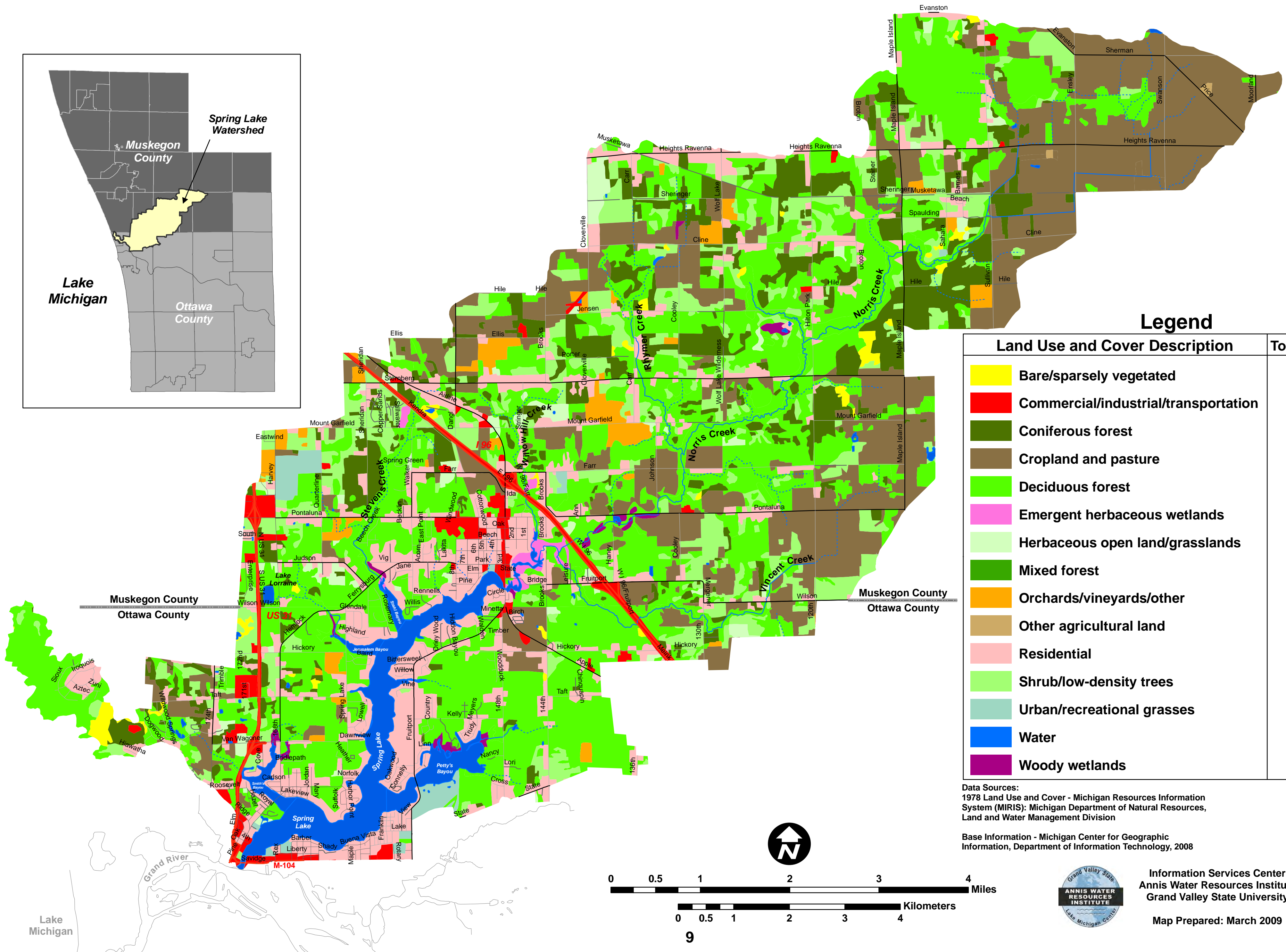
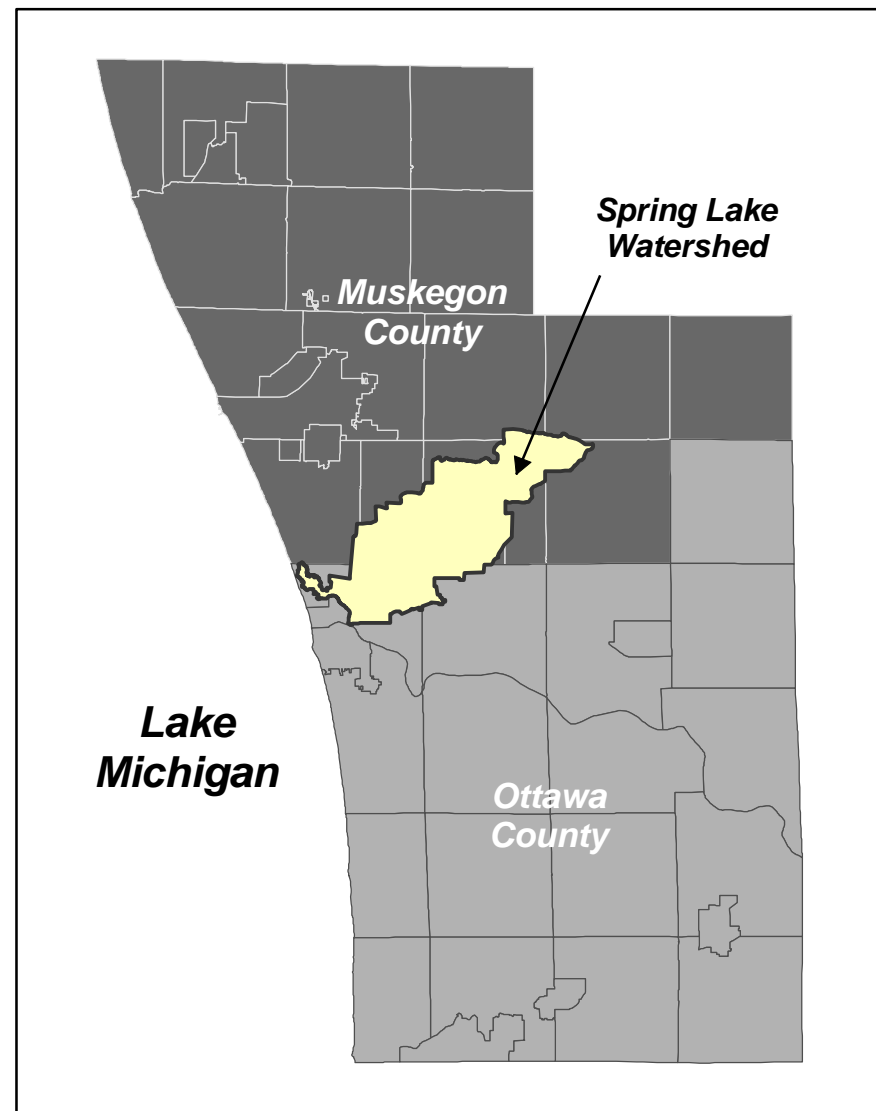
Base Information - Michigan Center for Geographic Information, Department of Information Technology, 2008



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1978 Land Use and Cover

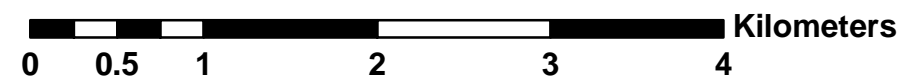
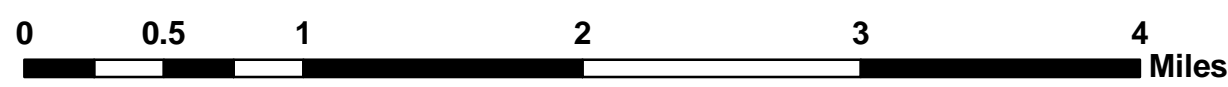


Legend

Land Use and Cover Description	Total Acres	%
Bare/sparsely vegetated	237	0.7
Commercial/industrial/transportation	838	2.5
Coniferous forest	3,267	9.7
Cropland and pasture	7,176	21.2
Deciduous forest	11,887	35.1
Emergent herbaceous wetlands	127	0.4
Herbaceous open land/grasslands	479	1.4
Mixed forest	0	0.0
Orchards/vineyards/other	598	1.8
Other agricultural land	13	0.0
Residential	4,221	12.5
Shrub/low-density trees	3,414	10.1
Urban/recreational grasses	286	0.8
Water	1,144	3.4
Woody wetlands	131	0.4

Data Sources:
1978 Land Use and Cover - Michigan Resources Information System (MIRIS): Michigan Department of Natural Resources, Land and Water Management Division

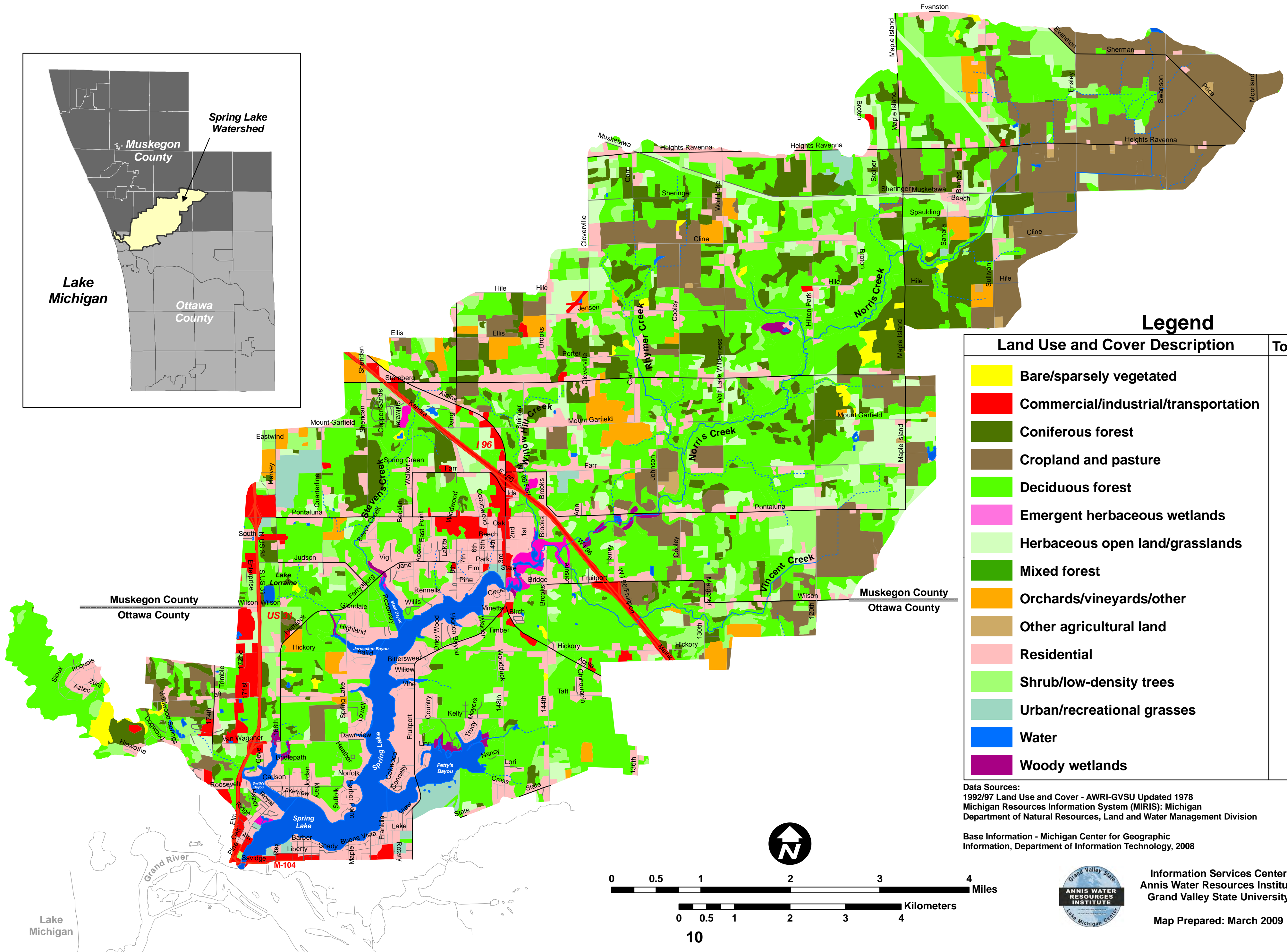
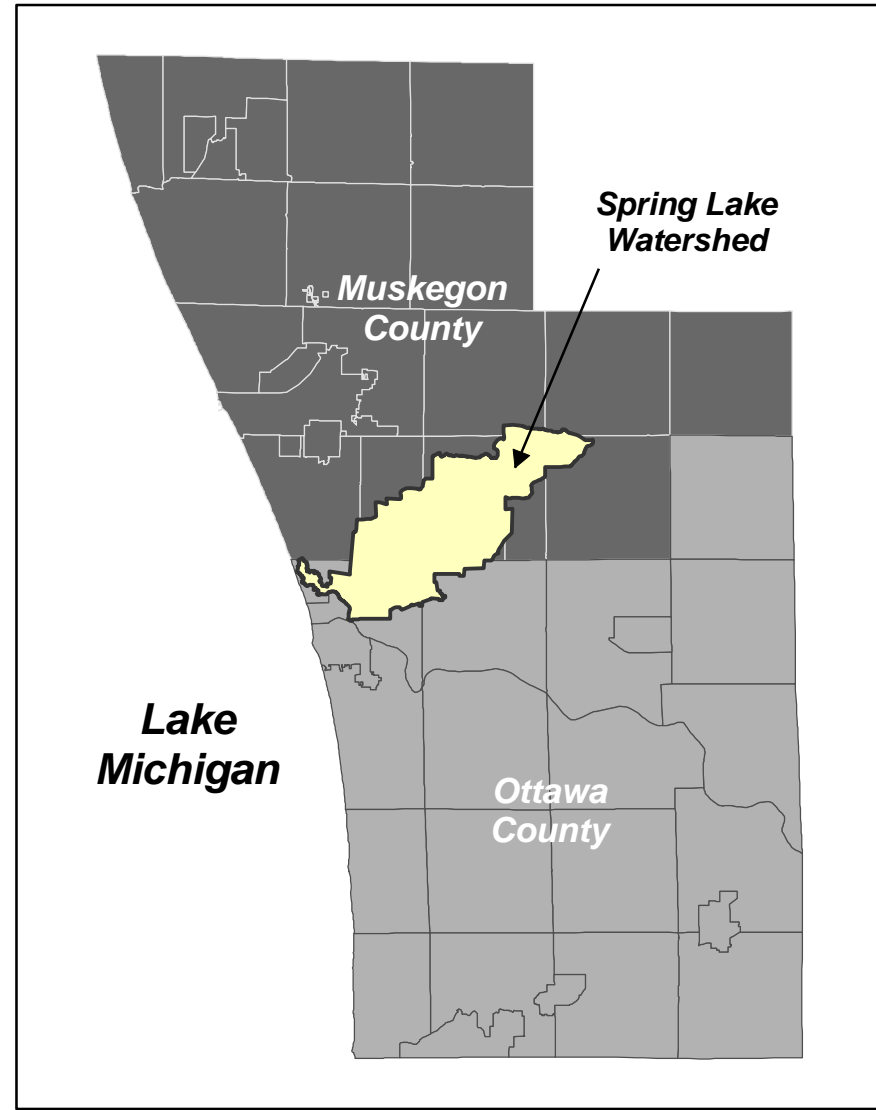
Base Information - Michigan Center for Geographic Information, Department of Information Technology, 2008



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1992-97 Land Use and Cover

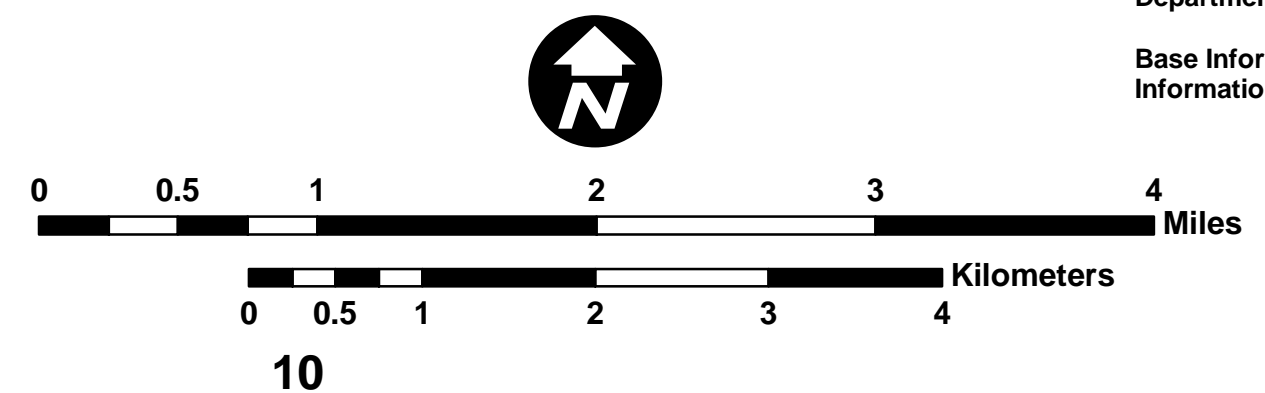


Legend

Land Use and Cover Description	Total Acres	%
Bare/sparsely vegetated	208	0.6
Commercial/industrial/transportation	1,020	3.0
Coniferous forest	3,187	9.4
Cropland and pasture	4,695	13.9
Deciduous forest	12,983	38.4
Emergent herbaceous wetlands	139	0.4
Herbaceous open land/grasslands	2,058	6.1
Mixed forest	40	0.1
Orchards/vineyards/other	818	2.4
Other agricultural land	71	0.2
Residential	4,993	14.8
Shrub/low-density trees	1,953	5.8
Urban/recreational grasses	381	1.1
Water	1,151	3.4
Woody wetlands	122	0.4

Data Sources:
 1992/97 Land Use and Cover - AWRI-GVSU Updated 1978
 Michigan Resources Information System (MIRIS): Michigan
 Department of Natural Resources, Land and Water Management Division

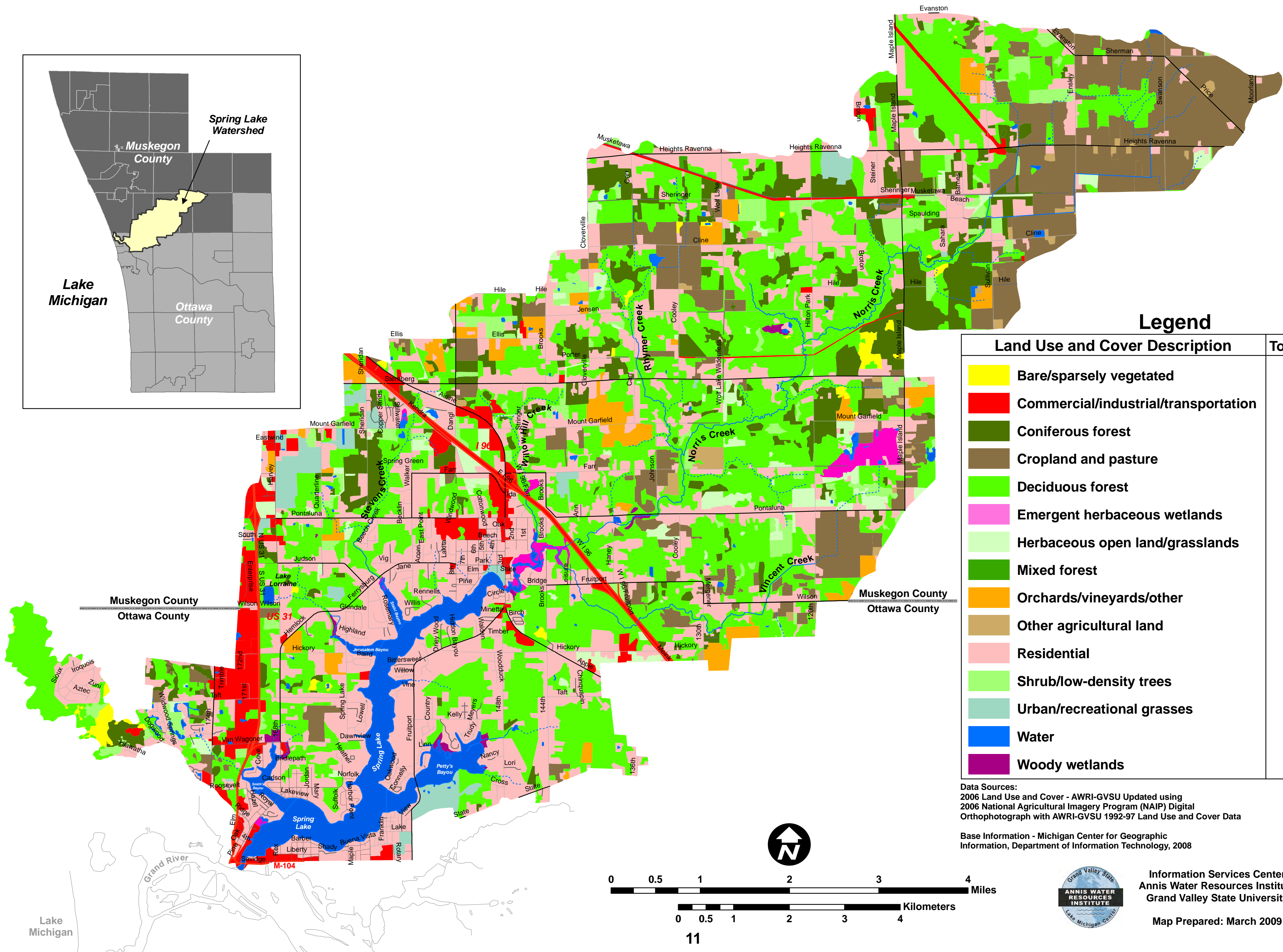
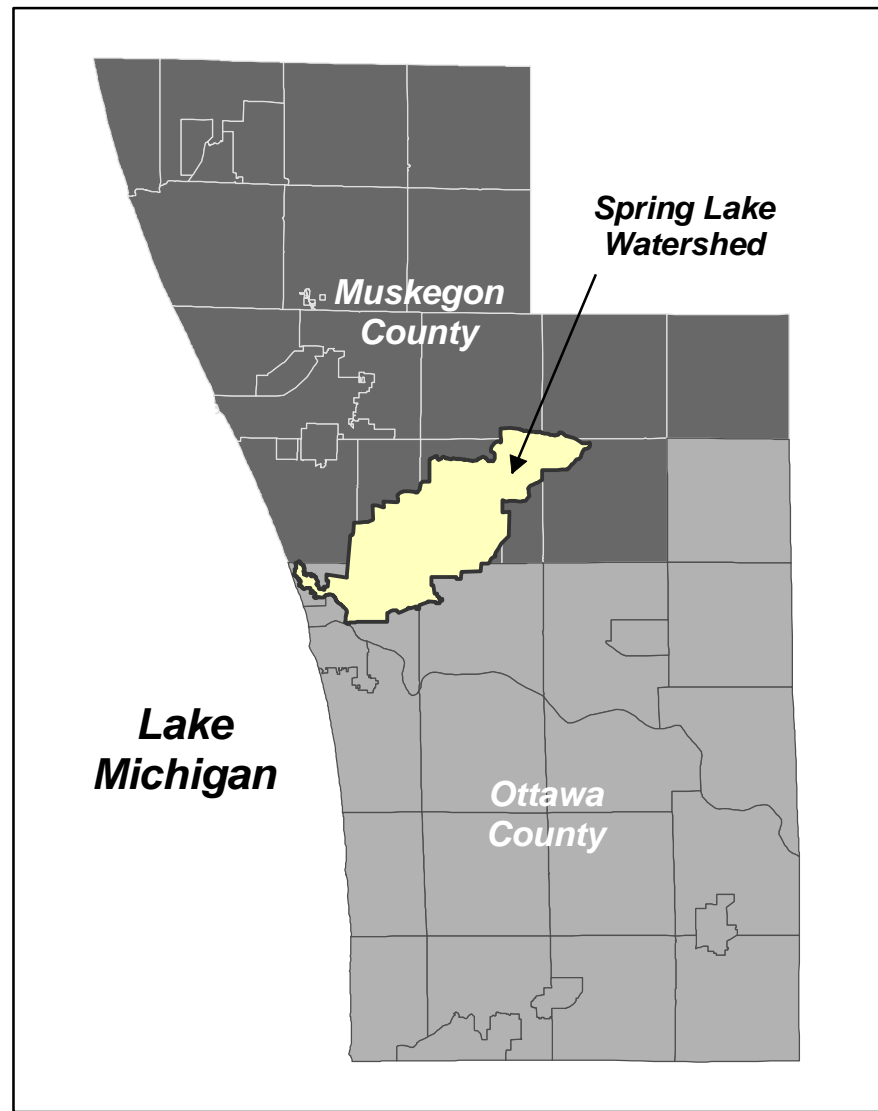
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2006 Land Use and Cover

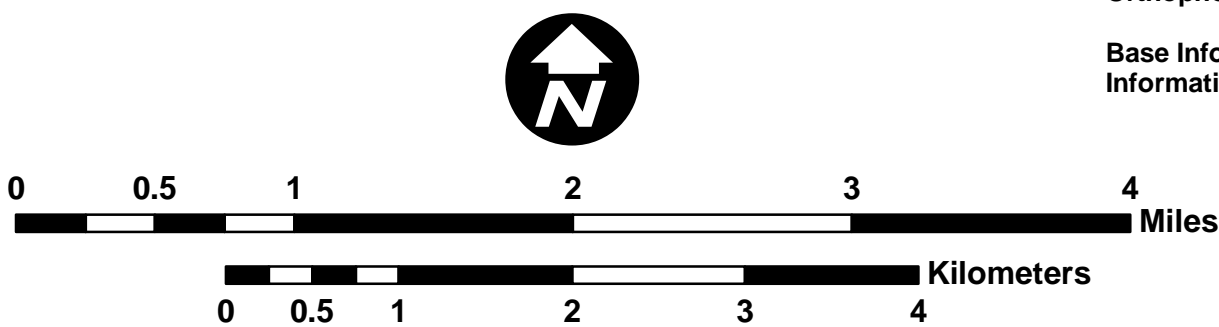


Legend

Land Use and Cover Description	Total Acres	%
Bare/sparsely vegetated	184	0.5
Commercial/industrial/transportation	1,504	4.4
Coniferous forest	2,643	7.8
Cropland and pasture	4,140	12.2
Deciduous forest	11,186	33.1
Emergent herbaceous wetlands	247	0.7
Herbaceous open land/grasslands	755	2.2
Mixed forest	5	0.0
Orchards/vineyards/other	834	2.5
Other agricultural land	214	0.6
Residential	9,343	27.6
Shrub/low-density trees	963	2.8
Urban/recreational grasses	523	1.5
Water	1,187	3.5
Woody wetlands	92	0.3

Data Sources:
 2006 Land Use and Cover - AWRI-GVSU Updated using
 2006 National Agricultural Imagery Program (NAIP) Digital
 Orthophotograph with AWRI-GVSU 1992-97 Land Use and Cover Data

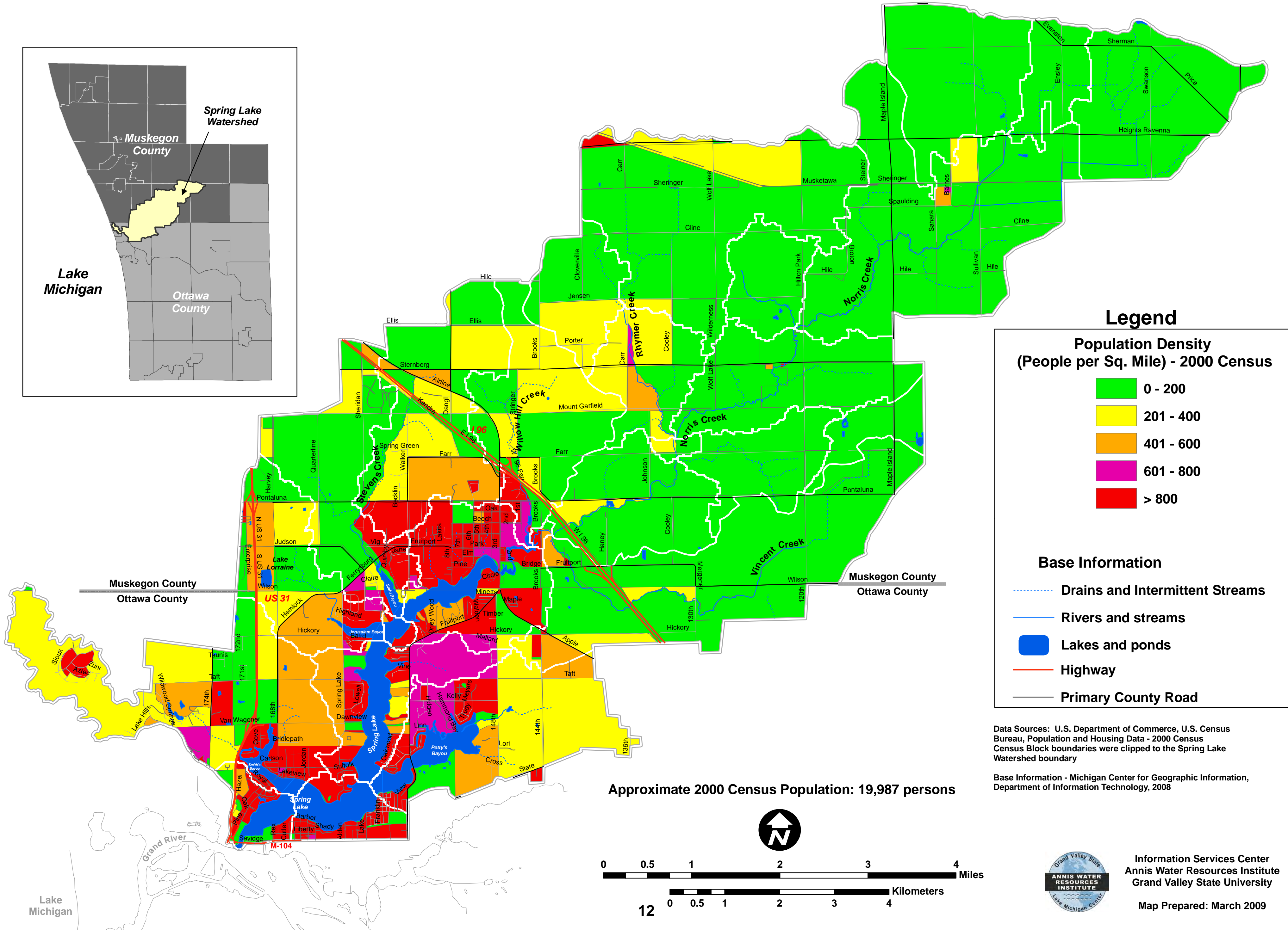
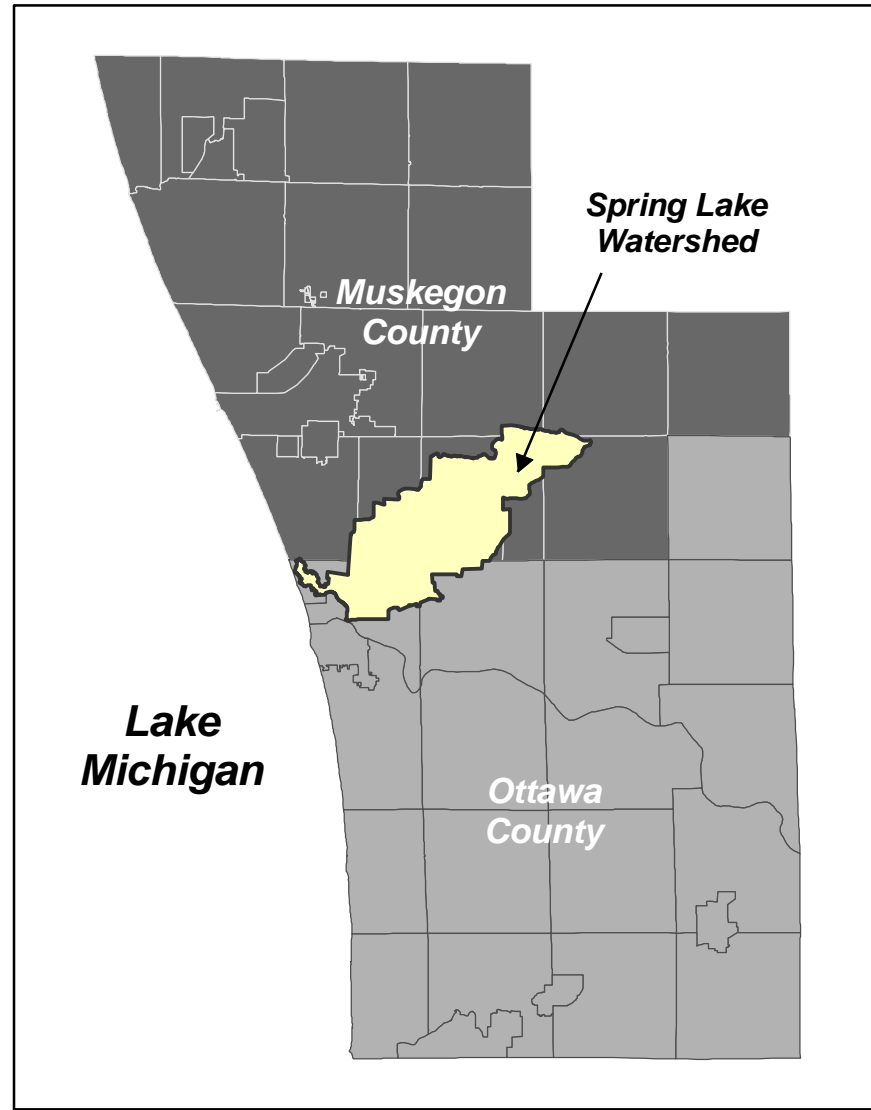
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Population Density - 2000 Census Blocks



Legend

Population Density (People per Sq. Mile) - 2000 Census

- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- > 800

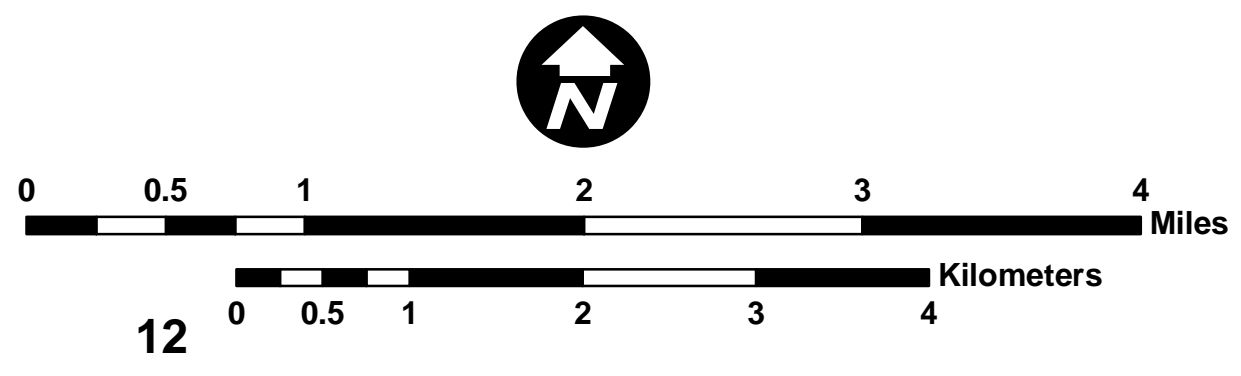
Base Information

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Data Sources: U.S. Department of Commerce, U.S. Census Bureau, Population and Housing Data - 2000 Census
 Census Block boundaries were clipped to the Spring Lake Watershed boundary

Base Information - Michigan Center for Geographic Information, Department of Information Technology, 2008

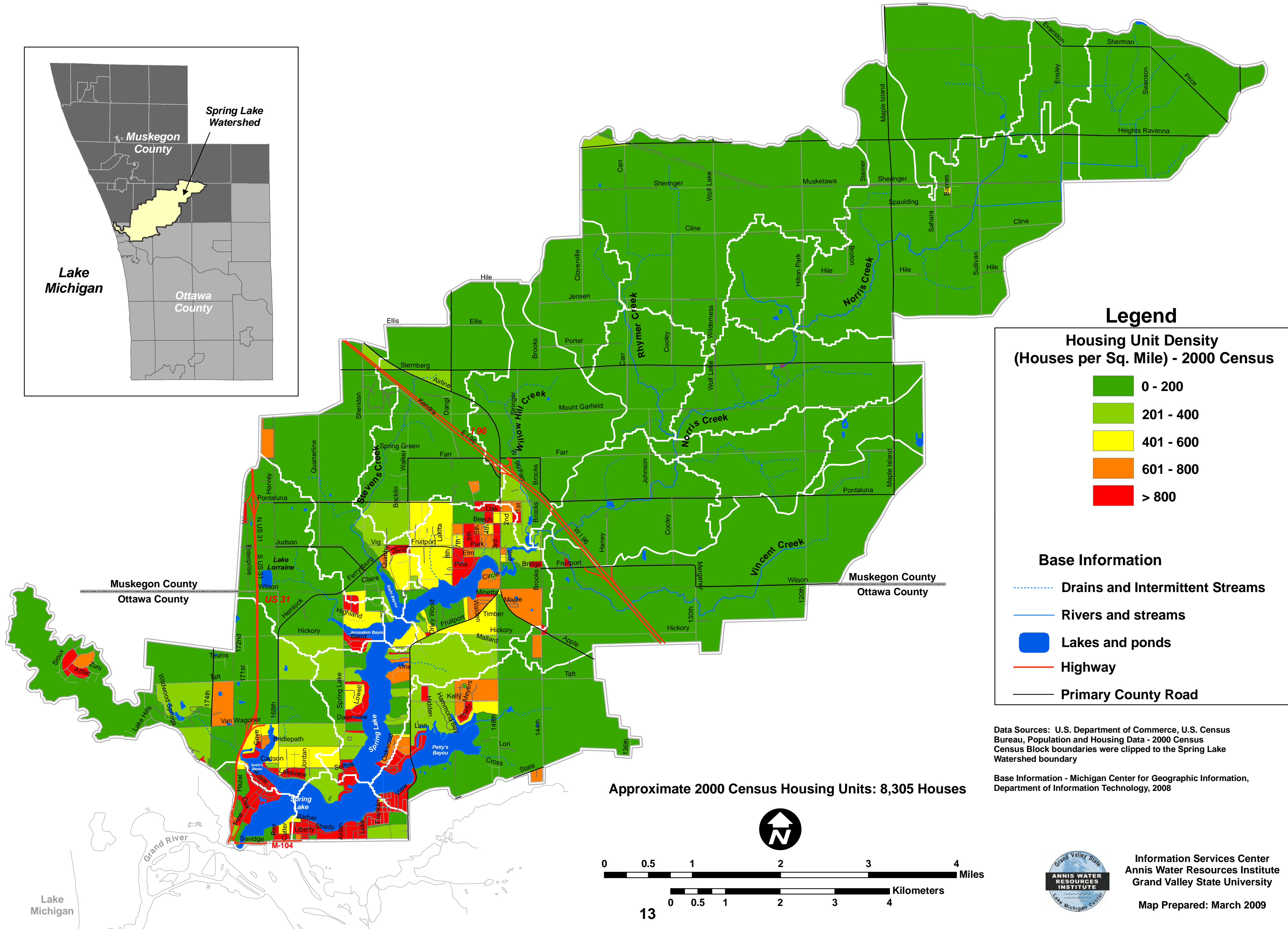
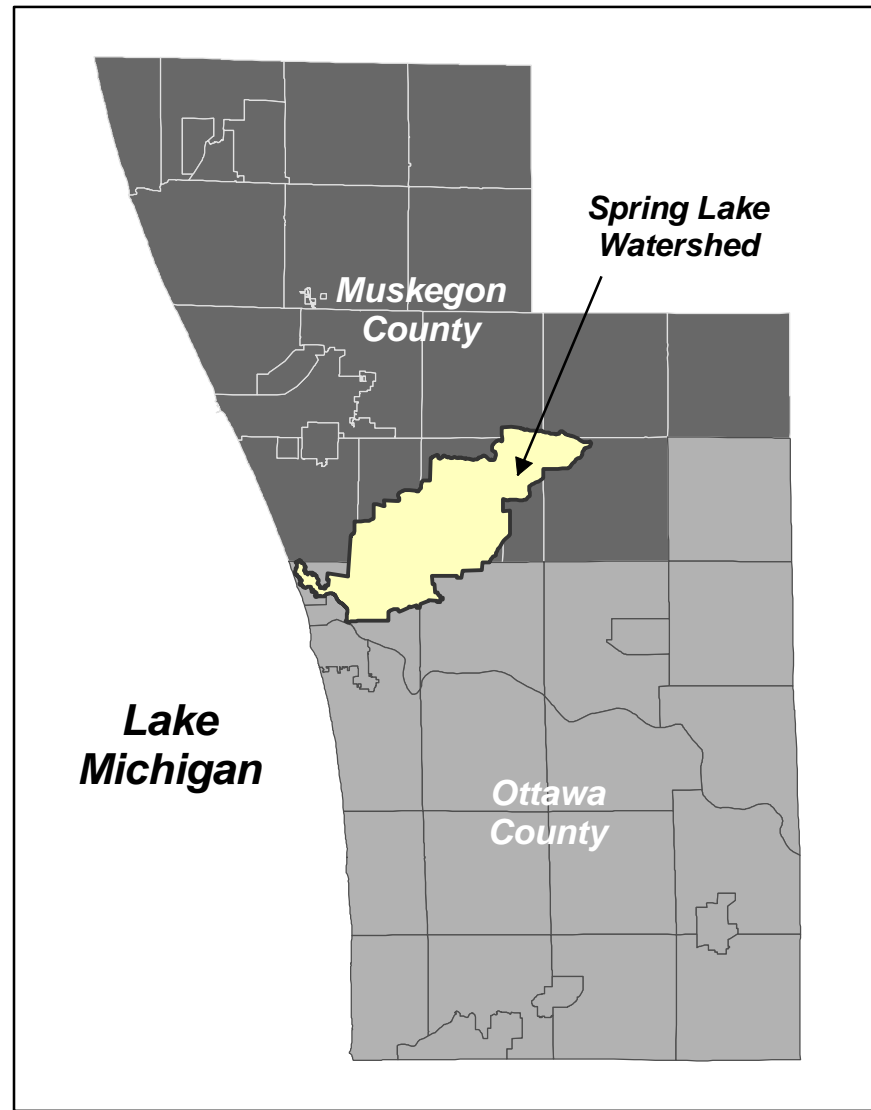
Approximate 2000 Census Population: 19,987 persons



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Housing Unit Density - 2000 Census Blocks



Legend

Housing Unit Density (Houses per Sq. Mile) - 2000 Census

- 0 - 200
- 201 - 400
- 401 - 600
- 601 - 800
- > 800

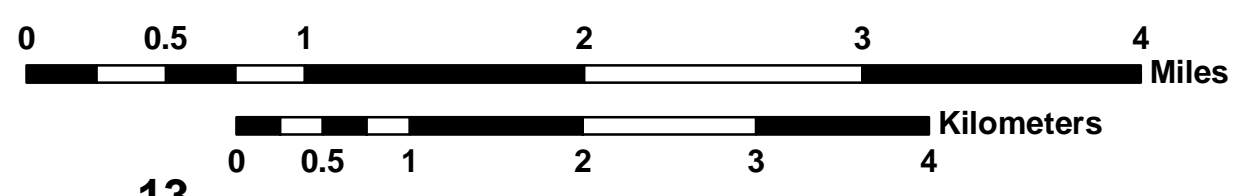
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Base Information - Michigan Center for Geographic Information, Department of Information Technology, 2008

Approximate 2000 Census Housing Units: 8,305 Houses

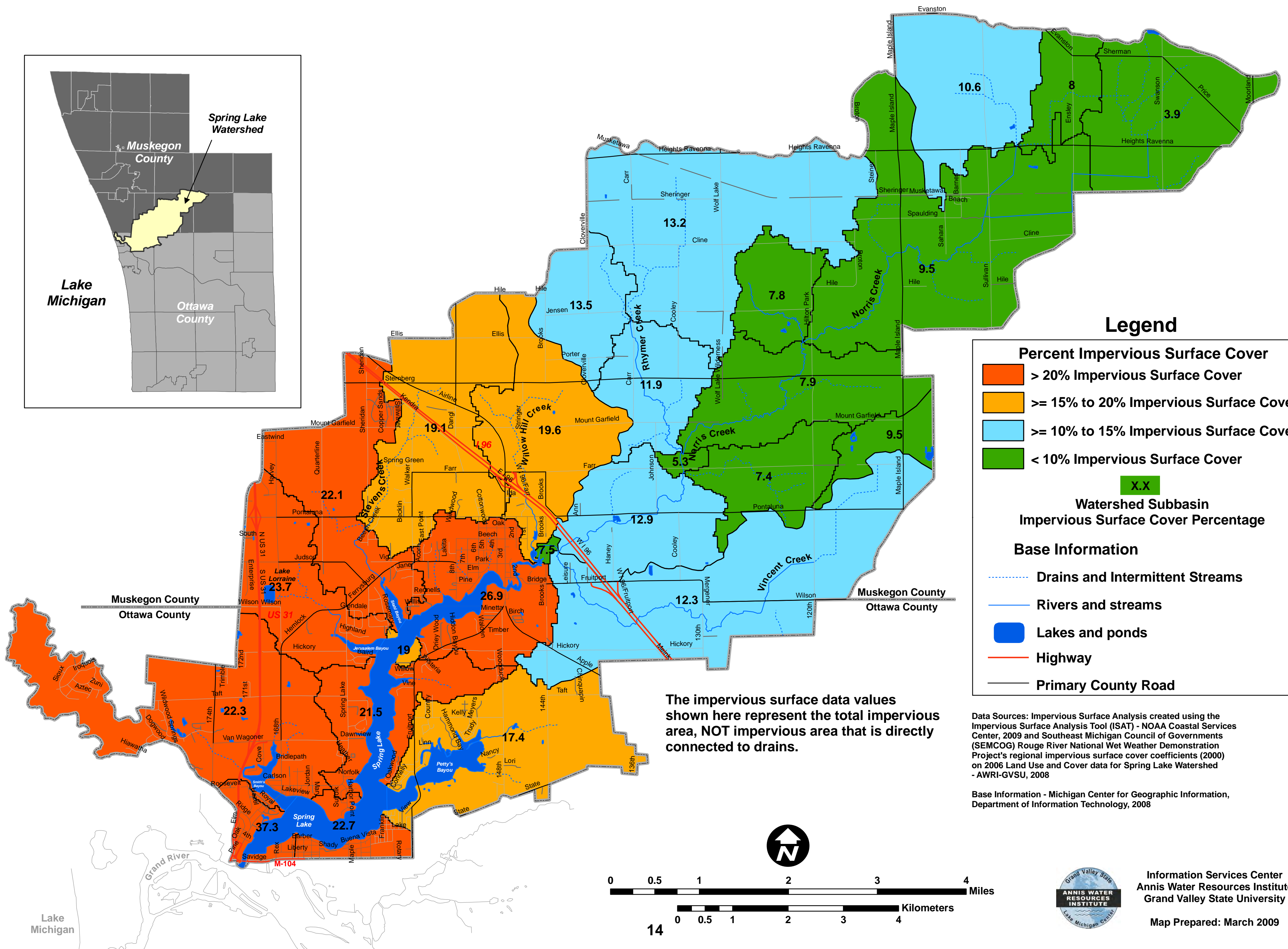
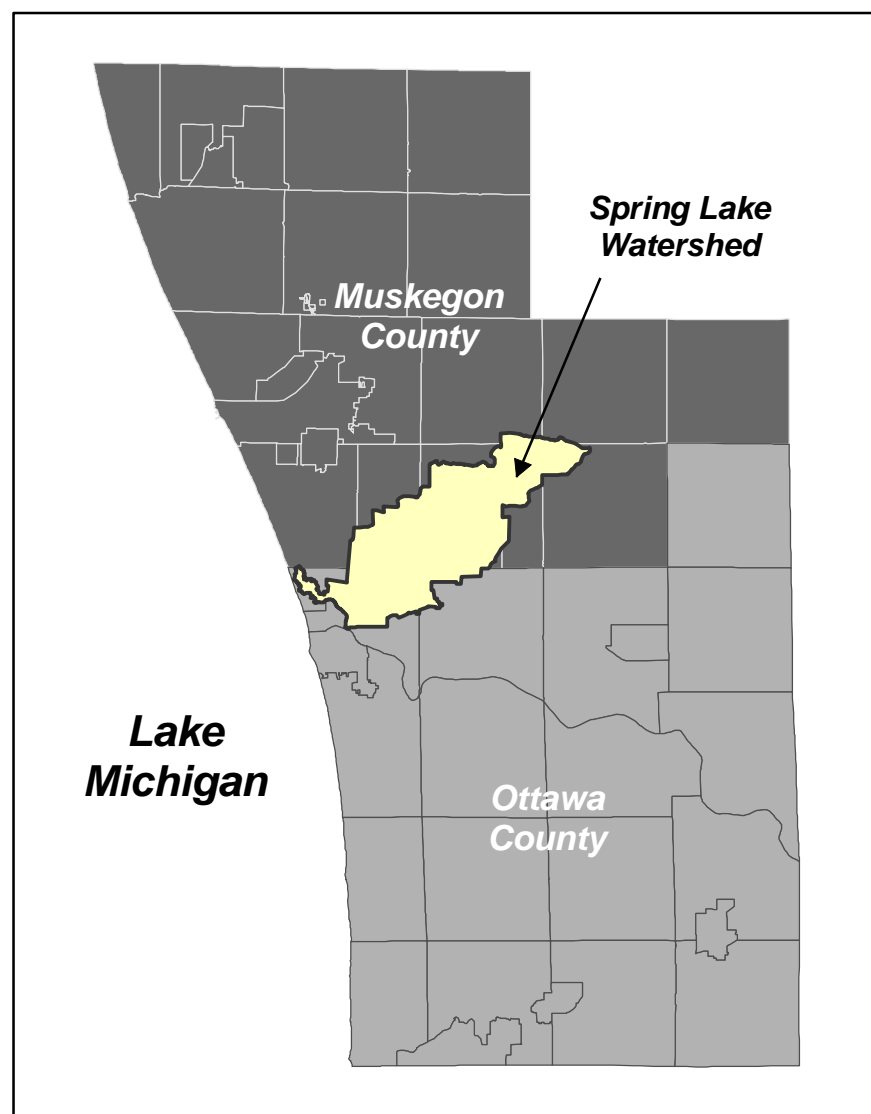


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Lake Michigan

Percent of Impervious Surface Cover - 2006



The impervious surface data values shown here represent the total impervious area, NOT impervious area that is directly connected to drains.

Legend

Percent Impervious Surface Cover

- > 20% Impervious Surface Cover
- >= 15% to 20% Impervious Surface Cover
- >= 10% to 15% Impervious Surface Cover
- < 10% Impervious Surface Cover

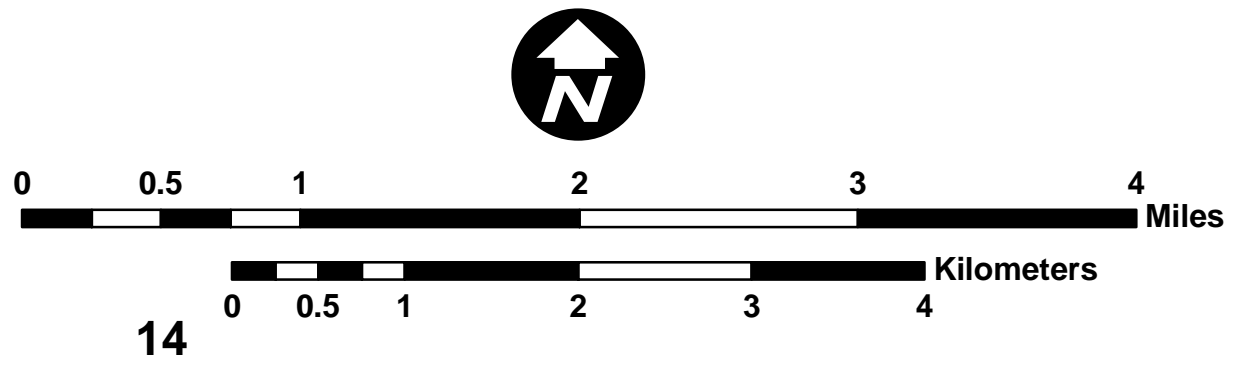
X.X Watershed Subbasin Impervious Surface Cover Percentage

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Data Sources: Impervious Surface Analysis created using the Impervious Surface Analysis Tool (ISAT) - NOAA Coastal Services Center, 2009 and Southeast Michigan Council of Governments (SEMCOG) Rouge River National Wet Weather Demonstration Project's regional impervious surface cover coefficients (2000) on 2006 Land Use and Cover data for Spring Lake Watershed - AWRI-GVSU, 2008

Base Information - Michigan Center for Geographic Information, Department of Information Technology, 2008



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Lake Michigan

